

POWER AND THE POLICY MACHINE: THE DEVELOPMENT OF CHILD
SURVIVAL POLICY AT THE GLOBAL LEVEL AND IN NIGER

by
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Abstract

Despite reductions in worldwide child mortality rates, 6.3 million children still die each year, the vast majority of them in low- and middle-income countries (LMICs), often from easily preventable and treatable diseases. This dissertation explores how a child survival strategy called integrated community case management of childhood illness (iCCM) was developed at the global level and adopted and implemented in Niger, drawing upon qualitative methods (in-depth interviews, document analysis), quantitative methods (citation network analysis), and contextual analysis of historical, political, economic and social trends.

The results show that the development of effective policies depends on far more than synthesizing relevant research evidence – particularly when “evidence” is narrowly defined as the scientific literature. Policy processes at both the global and national (Nigerien) levels were determined by (geo-) political factors, power structures, distributions of resources and economic and financial incentives, which influenced policy decisions of individuals and groups of actors.

At the global level (Chapter 4), an “epistemic community” of mid- to upper-level technical officers in global health norm-setting bodies, implementing agencies, funders and academic groups used sophisticated scientific analyses to develop and promote iCCM; however, their narrow technical focus created blind spots, for example about service delivery implications in countries with weak health systems.

In Niger, political economy factors and internal power relationships were crucial determinants of key policy decisions underlying iCCM, such as the President’s creation of the policy’s underlying health infrastructure (the “health huts”) as a way to distribute rents to client networks (Chapter 5). In terms of the use of evidence in the development of iCCM in

Niger (Chapter 6), technical expertise was concentrated among actors from multi-lateral and bilateral agencies who packaged and delivered scientific arguments supportive of iCCM to Nigerien policymakers, whose input was limited mainly to operational decisions.

This dissertation sheds light on determinants of policy-making processes that have been less frequently examined in the scholarly literature, notably how contextual factors shape policy content and determine whether policies are adopted and implemented at the country level. These issues merit further research, for while policy development processes remain as yet largely opaque, their consequences are far-reaching.

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Preface

The work presented in this dissertation reflects my attachment to founding principles in public health that have recently come back into vogue, namely the Vichrowian conception of the field as a social science – an activist science – whose findings have both practical and moral implications for the organization of our societies.

As a student at JHSPH, my academic instruction in these principles needed no further practical illustration than the bus I took each day from my apartment in clean, bright Mount Vernon to the bleak, impoverished neighborhoods surrounding the School of Public Health, areas separated by a ten-minute drive – and a ten-year difference in life expectancy. The reason for the difference in life expectancy? Chronic ailments such as diabetes and heart disease, elevated child mortality, accidents and violence – these are some proximate causes. But what of deep structural inequalities like East Baltimore’s economic deprivation, inadequate and degraded housing, political voicelessness, locally funded (or rather under-funded) schools and ongoing cycles of incarceration and criminality? Aren’t these causes in some truer sense? And while these circumstances are “bad” in themselves, that ten-year difference life expectancy seems the purest measure of the injustice: on average, people from the right side of the tracks in Baltimore, my side of the tracks, get an additional decade of time on Earth.

This way of framing public health’s central issues led me to “look upstream” and seek to identify the most powerful, far-reaching, and consequential determinants of health at the population level. For the purposes of this dissertation, I landed on policies – the ways societies allocate necessary or desirable goods and direct resources to specific population groups – and the political incentives driving policy decisions, the availability and

mobilization of resources to finance them, and social forces affecting what gets put in them in first place.

Why Niger? Though I have since become attached to the country's people, culture and languages, I was shocked by the materiality of its poverty when I first landed there as a Master's student in 2006. With historically very high child mortality rates, it was not unusual when asking a Nigerien about his children to learn that he had "three living, two deceased," or some such reply. The burden of disease is also a burden of sorrow. Thus, when the opportunity came to work on a policy analysis of child survival in Niger with a set of excellent researchers at JHSPH, I signed up without hesitation.

I hope this dissertation will contribute to emerging understandings about the connections between structural phenomena and population health – most especially the health of the world's poor, whose exposure to pathologies is as outsized as their access to basic care is disproportionately low. Generating knowledge about these links is a necessary first step to addressing them – tasks whose urgency cannot be overstated.

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List of abbreviations

ACSD	Accelerated Child Survival and Development (Unicef project)
ACTs	Artemisinin Combination Treatments
ANC	Antenatal care
ARI	Acute respiratory infections
AWARE-RH	Action for West Africa Region – Reproductive Health (USAID project)
BASICS	Basic Support for Institutionalizing Child Survival (USAID)
CCM	Community Case Management of childhood illness
CDD	Control of diarrheal diseases
CHERG	Child Health Epidemiology Research Group
CHW	Community Health Worker
C-IMCI	Community-level component of IMCI strategy
CI/IHSS	Catalytic Initiative “Integrated Health Systems Strengthening” Program
CIDA	Canadian International Development Agency
CSI	Integrated Health Centre (<i>Centre de santé intégrée</i>)
DFATD	Canadian Department of Foreign Affairs, Trade and Development
GAPP	Global Action Plan on Pneumonia
GOBI	Growth monitoring, oral rehydration, breastfeeding, immunization
HIPC	Heavily Indebted Poor Countries initiative
HMM	Home Management of Malaria
iCCM	Integrated Community Case Management of Childhood Illnesses
IEC/BCC	Information-Education-Communication/Behavior Change Communication
IMCI	Integrated Management of Childhood Illnesses
JHSPH	Johns Hopkins Bloomberg School of Public Health
KFP	Key Family Practices
LiST	Lives Saved Tool
LMICs	Low- and middle-income countries
MCHIP	Maternal and Child Health Integrated Program (USAID)
MDGs	Millennium Development Goals
MOH	Ministry of Health
NGO	Non-Governmental Organization
ORS	Oral Rehydration Salts
PMI	U.S. President’s Malaria Initiative
RBM	Roll Back Malaria (WHO)
RDT	Rapid Diagnostic Test
TDR	Tropical Disease Research special program (WHO)
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WAHO	West African Health Organization
WHO	World Health Organization

Chapter 1. Introduction

1.1 Introduction

Globally, despite widespread declines in child mortality rates in recent years, an estimated 6.3 million children under 5 died in 2013, of which three of the top causes were pneumonia (15% of deaths), diarrhea (9%), and malaria (7%) (You, Hug et al. 2014). Each of these pathologies can be prevented and treated with simple and affordable interventions, explaining why the vast majority of these deaths occur in low- and middle-income countries (LMICs) among populations with limited access to health services.

Policy advances to address this disparity could affect the life chances of millions of children worldwide. Since the 1970s, selective primary health care using community-level service delivery has been recognized as a solution for reaching poor, rural populations and preventing child deaths, though the full promise of this policy has yet to be realized. One recent version of this policy, Integrated Community Case Management (iCCM), has received the full endorsement of the global health policy community in the form of a joint statement by WHO and Unicef (WHO/UNICEF 2012) and support from major bilateral and multi-lateral agencies. The iCCM strategy encompasses curative treatment for malaria, pneumonia, and diarrhea in children under five by community health workers (CHWs). Positioned by global actors as an “evidence-based policy,” iCCM rests on studies showing that interventions carried out by CHWs for each of these pathologies can reduce under-5 mortality rates, with fairly pronounced effects when curative treatments (anti-malarials and antibiotics) are included (Christopher, Le May et al. 2011).

The scholarly literature on health policy in LMICs remains underdeveloped, despite the high political, economic and human stakes of policy choices (Gilson and Raphaely 2008). For

example, there are only a few published studies on processes of policy change for malaria treatment policies, despite this disease's considerable ravages on health and well-being in LMICs, particularly in Africa (Williams, Vincent-Mark et al. 2009; Woelk, Daniels et al. 2009; Cliff, Lewin et al. 2010). What studies do exist on policy development in LMICs tend to focus more on policy implementation than formulation (Gilson and Raphaely 2008). The paucity of the literature is compounded by the fact that many studies are mainly descriptive, lacking a strong theoretical basis, and furthermore put an undue focus on technocratic aspects of policy-creation by relying on a "rational" model of evidence use that fails to take into account that policy reform is inevitably political: it seeks to change who gets valued goods in society (Reich 1995). While it is recognized that political, economic and social factors influence health through multiple pathways, insufficient attention has been paid to their impact on policy development at the global and national level.

Niger was one of the first countries to fully adopt and implement iCCM, which alongside other interventions contributed to a 43% reduction in the country's child mortality rate, from 226 deaths per 1000 live births in 1998 to 128 deaths in 2009 (Amouzou, Habi et al. 2012). After examining how the policy was developed at the global level, this dissertation will illuminate the process of iCCM policy development at the national level in Niger, tracing the path of a globally-produced strategy to its application to Niger's stringent demographic, epidemiological and economic challenges, and drawing lessons on the reasons for its success.

1.2 Study objectives

This dissertation explores the development of health policy using the example of iCCM at the global level and in Niger, focusing on the social and structural (political, economic, and historical) determinants of policy-making processes and the use of evidence in policy

adoption. I use case study methodology based on a range of qualitative and quantitative methods described in detail in each of the substantive chapters (Chapters 4-6).

Understanding factors that support or inhibit the formulation of pro-poor policies, and the globalized policy environment they operate in, is a precursor to removing barriers to putting evidence-based policies in place and ultimately improving health outcomes for disadvantaged populations. In all papers, I strive to provide historical context for policy decisions and take a long view of the policy development process (at least two decades). This study provides new contributions to the scholarly literature on how health policy is created at the global and national levels in LMICs, and responds to previous calls by scholars to provide a stronger theoretical basis for policy decisions, as well as the sources and exercise of power in policy development at these levels.

Each paper included in the dissertation has its own specific aim. The first paper (Chapter 4) aims to describe the origins of iCCM policy at the global level and provide a theoretical explanation for how it came to the fore of child survival efforts using the “epistemic communities” framework first described by Haas (1994). The second paper (Chapter 5) examines iCCM policy development at the national level in Niger, focusing on the role of power in the policy’s successful adoption and implementation, extending a political economy view of power to the health policy domain by incorporating technical expertise as one of its components. Finally, in the third paper (Chapter 6), I provide a case study of the processes of knowledge translation and research utilization during iCCM policy development processes in Niger and identify relevant theoretical categories of knowledge and practice, also with an attention to power dynamics.

1.3 Conceptual framework

This dissertation draws on ideas from three theoretical perspectives, which were used to inform research questions, data collection and analysis methods, and interpretations of results: 1) policy analysis theories from the public health and public policy literatures, 2) political economy theories pertaining to African states, and 3) social constructionism. These theoretical perspectives inflect the substantive chapters of this dissertation to varying degrees, as is reflected in each chapter's section on theory.

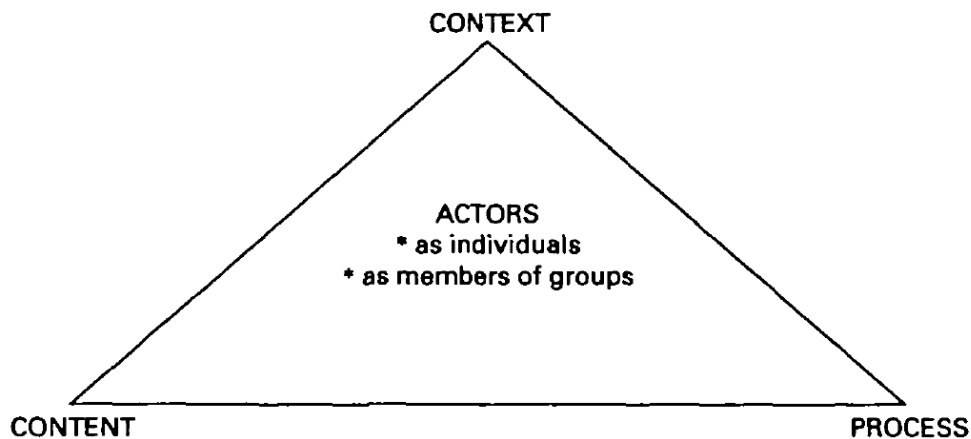
1.3.1 Theories of policy analysis

This dissertation examines policy development processes at both the global level and the national level in Niger. At the global level, the determinants affecting the selection of particular health policies or priorities over others are not well understood. Aside from the fact that policy change is a profoundly political process (Reich 1995), “we know little about the sources of variance in priority levels afforded to global health initiatives” despite the massive sums mobilized on their behalf (Shiffman and Smith 2007). And though improved analytical tools allow for increasingly precise estimates of the impact of specific interventions on disease burden, health policy choices, both globally and at the national level, cannot not be explained by “material factors” such as disease burdens and the availability of cost-effective interventions (Reich 1995; Reichenbach 2002).

In the early 1990s there were calls for a new approach to health policy analysis, which theretofore had focused almost exclusively on Western countries (Walt and Gilson 1994; Reich 1995; Reich 1995). Furthermore, previous studies focused on technical content and design and not on “politics, process and power,” as these authors now urged (Gilson and Raphaely 2008). As a heuristic for analyzing these issues, Walt and Gilson proposed a

“policy triangle” (**Figure 1**) that would subsequently become the most commonly used framework in policy analyses in LMICs: in the “policy triangle,” *actors* negotiate policy *content*, policy-making *processes*, and the overall institutional, political and social *context* (Walt and Gilson 1994; Gilson and Raphaely 2008). This simple framework provides the basis of this dissertation’s “nuts and bolts” analytical work; that is, producing a thorough, precise, and in-depth description of iCCM policy development at the global level and in Niger. While the “policy triangle” does have the benefit of simplicity, each category contains multitudes; this dissertation’s emphasis on political and contextual determinants of policy choices will no doubt nourish the reflection on policy *context*.

Figure 1 : Walt and Gilson’s model for policy analysis (Walt and Gilson 1994)



The first and only systematic review of health policy analysis in LMICs, covering the years 1994-2007 (n=164 articles), described its four main characteristics as “small size, diversity, fragmentation, and domination by authors based in northern organizations” (Gilson and Raphaely 2008). The vast majority of these articles was based on one country case (just 7% included more than one country) and only 23% of studies focused exclusively on policy development (as opposed to implementation). Despite these limitations, some conclusions

could still be drawn from the pool of articles, notably that policy change is always contested and that policy is socially “constructed, wrapped up in and influenced by the meanings different actors attribute to policy content or goals.” Of particular pertinence to the creation of iCCM policy, the review also found that equity-oriented policy reforms can be hindered by resistance from powerful stakeholders, and that intended beneficiaries are often excluded from even local-level policy making processes.

In intervening years, studies have examined barriers to using research in policy development (Woelk, Daniels et al. 2009; Cruz and Walt 2013; Deeming 2013), even though policymakers in LMICs nearly universally cite evidence as being crucial to making good policy decisions (Burchett, Mounier-Jack et al. 2012). Yet one clear finding in the health policy literature on LMICs (and in Western settings) is that evidence alone is not sufficient for rational policies to be put in place, even when coupled with international donor prioritization and resource availability (Shiffman 2007). A comparison of prioritization for breast and cervical cancer in Ghana, for example, reported that “political attention essentially trumped available scientific and economic evidence in terms of the priority given to breast cancer rather than cervical cancer” (Reichenbach 2002). Still, actor groups such as professional groups exercise authority in the policy process on the basis of their expertise in understanding research and interpreting scientific evidence; in highly technical domains such as health, experts can exercise considerable power (Rose and Miller 1992)

At the national level, there are a host of structural and historical factors that can affect policy formulation in LMICs. In a study of CCM policy formulation and implementation in Nicaragua, international support was a facilitator to policy development, but so were a national history of community participation, government commitment to reaching the poor,

public sector decentralization, and resource constraints (George, Menotti et al. 2010). Even when programs are shown to be successfully implemented, effects have been observed to taper off after declines in political and financial support, as was the case for a Gambian malaria prevention program (Hill, MacLeod et al. 2000). Other important evolutions in the national political arena can include decentralization, democratization and major political transitions, which influence health policy outcomes by distributing power and altering processes by which policies are made and implemented (Shiffman 2007). Finally, interactions between state actors and international agencies, including bilateral and multi-lateral agencies, aid and lending institutions, and NGOs are a significant feature of health policy-making in LMICs, yet the influence of global elites, international policy decisions, and resource flows on national policy remains to be fully elaborated, even though regional and international links can be “crucial” in policy decision making (Cliff, Walt et al. 2004).

1.3.2 African health policy environments in political economy perspective

The political economy literature offers clues on features of African states with the potential to impact decisions made throughout the policy cycle, including 1) governance types, 2) political participation, 3) economic and fiscal factors, and 4) relationships with external actors. In this section, we will focus on characteristics of neo-patrimonial states, a strongly executive form of rule characteristic of many African countries, including this study’s main study site, Niger.

Governance types

Governance types are closely linked to policy because they condition the relationship between ruler and ruled and determining the location of power within the state, including as this relates to health policy. In terms of the relationship between ruler and ruler, African

states often operate according to *clientelist mechanisms* making extensive use of state resources for political purposes. Systems of patronage, rooted in colonial and pre-colonial patterns, undergird many African states, although these are cloaked in the appearance of Western-style bureaucracy (van de Walle 2001).

Power in these types of regimes operates under powerful distributive pressures, yet “is concentrated and personalized, entailing discretionary control over broad realms of public life” (Lewis 1996). African neo-patrimonial governance often follows a *presidential system*, dominated by a strong executive branch: in policy areas, there is often little delegation to technocratic groups, and the executive leads (Lewis 2002). For health policy, this could have a number of implications: technocratic elements have less power to promote life-saving policies, but the president’s whim could go a long way.

In electoral regimes, there is also evidence of persistent patronage politics – a system of functioning that may clash with donor policies or modalities and affect which policies are selected, depending on the identities of the regime’s clients (Bienen and Herbst 1996). In democratic regimes such as those of Niger over the past two decades, *populist coalitions* have often formed, which may include, beyond clients of senior officials, state employees, labor groups, and recipients of subsidies or protections on manufacturing (Lewis 2002). However, as Meddi Mugenyi argues, “electability is not the same as capability in handling public policy and management. ... Elected politicians tend to be populist, but development decision-making tends to be technical” (Mugenyi 1988).

Political participation

For policies such as iCCM, designed to benefit poor, disempowered groups, it is interesting to consider the potential role of political participation was important in claiming the right to

health care or demanding reductions in child mortality rates. Theorists have long distinguished between “procedural forms of democracy, where a minimum set of democratic rules and rights are observed, and *substantive democracy*, in which citizens are broadly included in the political arena and the populace exercises an effective voice” (Lewis 2002). In Africa, “illiberal” electoral democracies have tended to succeed authoritarian regimes, failing to fully develop government accountability, overarching rights and liberties, and the inclusion of marginal groups (Diamond, Linz et al. 1996). In a related observation, the region’s political parties often fail to advance forceful policy ideas (Bienen and Herbst 1996).

Limited political participation in these types of states means that policy decisions are often decided by a *small elite*, whose members overlap considerably from regime to regime (Bienen and Herbst 1996). In a country like Niger, with a highly rural, poor and illiterate population, membership in the elite is likely highly concentrated (e.g. Niamey’s “fifty families”). Indeed, *urban bias* is a recognized feature of post-colonial African states and economies, beginning with Bates’ classic analysis of agricultural policy, which showed the extent to which policy choices disfavored residents of rural areas (Bates 2005). African governments are often based almost entirely in the capital city, whereas rural constituencies have trouble organizing –elections have little affected this divide (Bienen and Herbst 1996). Ruling coalitions thus tend to be made up predominantly of urban dwellers, largely excluding the rural constituents who would benefit from policies resembling iCCM (van de Walle 2001).

Economic and fiscal factors

The economic outlook for Africa has significantly improved over the past decade, with GDP growth returning to an average of 2.6% per year between 2000 and 2008 (Moss 2011). This follows a two-decades’ long *growth crisis* with only a few states spared (Botswana, Mauritius)

from virtual devastation: in the 1980s, average incomes declined at 1% per year and in the 1990s at 0.4% per year (Moss 2011). Declining terms of trade and external shocks in the form of the oil crisis made a bad situation worse; in international trade, Africa's position was significantly marginalized, leaving it with little say in international economic institutions such as the WTO, which set the "rules of the game" (Collier 1995). Thus many African states are emerging from a period of internal economic weakness and a position of weakness in the international economic system. Decades of economic decline, and the ensuing debt crisis, have left many states in a precarious *fiscal position*, with effects for *health spending*. Generally, spending in neopatrimonial regimes tends to be *regressive*, reinforcing inequitable social divisions, upon ethnic or class lines, which would suggest an obstacle for iCCM policy (Lewis 2002).

Relationships with external actors

Although policymakers themselves often inhabit national and transnational roles simultaneously, an understanding of the relationship between state and non-state actors and institutions is particularly warranted given the colonial and post-colonial legacy of the state in Africa, whose governing apparatus is transplanted from the West rather than organic. As a result, some analysts argue state actors' power derives largely from their position as interlocutors of privilege with outside actors, hence the term "gatekeeper" states (Cooper 2002; Englebert 2009). Due to their low capacity, these states have difficulty extending their power within their borders: "their survival [depends] precisely on the fact that formal sovereignty was recognized *from outside*, and that resources, such as foreign aid and military assistance, came to governments for that reason" (Cooper 2002).

Indeed, in many African nations, ever-larger aid *international aid flows* have taken over many of the state's essential functions (van de Walle 2001). Representatives of international aid agencies thus have a strong voice in negotiations on the provision of public goods and services, not least in the area of health. Such massive aid flows have created a situation of “dynamic dependency,” binding states to donors' agendas and withering capacity (Naudet 1999). This “dependency,” however, is not entirely one-sided, as industry workers depend on ongoing development work for their livelihoods (Ellis 2011).

Putting countries' relationships with external donors in historical perspective, it is important to evoke the trauma of *structural adjustment*, remembered by all parties as a painful failure, though the reasons for the failure remain controversial. It has been widely documented that structural adjustment policies progressively eroded state capacity due to years of non-reform, coinciding with a persistent economic crisis that forced states to cut back social programs and other offerings (van de Walle 2001).

Finally, states may also be subject to *political interference*. Former French colonies such as Niger have been subject to significant outside political interventionism from France in the years since independence (Moss 2011). Under General de Gaulle and his successors, and continuing until late in the 20th century, the French state operated a system with “striking similarities to formal colonial control in political, economic, military and financial matters.” The grip of this system, known as *Françafrique*, finally began to relax after a series of unfortunate events in the 1990s, including France's implication in the Rwandan genocide (the so-called “genocide fax”), the devaluation of the CFA currency and the death in 1993 of Ivoirian President Félix-Houphouët-Boigny (Ellis 2011). Even today, European if not French actors still have a direct influence on monetary policy in the CFA zone: the

currency, used by a dozen countries in West Africa, is pegged to the euro, in continuity with the colonial past of monetary control from abroad (Nubukpo 2007).

1.3.3. Social constructionism

Lastly, the social constructionist lens is particularly well suited to the production and use of evidence in policy-making processes. Social constructionism emerged in 1960s and 1970s from works such as Berger and Luckman's "The Social Construction of Reality" (1967), and focuses on the role of society in creating "reality" and holds that meaning and understanding are produced by individuals acting in concert with each other, exchanging interpretations and knowledge in a dynamic process. The notion that science, or the creation of knowledge, is determined by social processes was famously advanced by Thomas Kuhn, who argued that scientific inquiry itself was shaped by socially constructed categories (Kuhn 1970).

Several studies have applied concepts from social constructionism to the study of health policy at the global level and in LMICs, notably Shiffman's work on issue attention (sometimes also called prioritization) in global public health (Shiffman and Smith 2007), issue attention regarding newborn health (Shiffman 2010), and structural factors affecting maternal mortality outcomes (Shiffman and Garcés del Valle 2006). Shiffman argues social constructionism can explain the choice of policies, which are predicated on social contexts and norms that are continually being reconstructed and renegotiated. As he explains, "those issues that attract attention may be the ones in which policy community members have discovered frames – ways of positioning an issue – that resonate with global and national political elites..." (Shiffman 2009). As such, issues take on high symbolic value, as observed in a previous study of cancer prioritization in Ghana, where the social construction of the breast as a symbol of maternal caring provided enhanced support to policies

combatting breast cancer compared to cervical cancer, despite the latter pathology's greater public health importance in terms of incidence in LMICs (Reichenbach 2002). In more recent work, Shiffman has simplified his earlier frameworks, proposing a "social explanation for the rise and fall of global health issues," based on actors' perceptions of the health problem as *severe* and *neglected* and its solution as *tractable* and *beneficial* (Shiffman 2009). This explanatory model places particular importance on communication between actors, who interact to frame the issue, debate and interact, and ideally find solutions to the problem at hand.

1.4 Organization of the dissertation

Beginning in Chapter 2, I provide background information related to the history of global child survival initiatives leading up to iCCM and the evidence base for iCCM policy found in the existing scientific literature. In Chapter 3, I give context on the main study site, Niger, providing an overview of the country's recent political history and political, economic and social features, particularly as they relate to Niger's health system and health policy decision-making.

Starting with Chapter 4, I present three manuscripts, the first two of which have been submitted to the journal *Health Policy & Planning* for inclusion in an upcoming supplement on iCCM (both articles were accepted with revisions and have been re-submitted in their current form). Chapter 4 describes the policy formulation process for iCCM at the global level, using the "epistemic communities" conceptual framework to explain how this policy came to the fore as a child survival initiative. Chapter 5 examines how iCCM and supporting policies were adopted at the national level in Niger, focusing on the role of power in terms of political authority, financial resources and technical expertise. Chapter 6 focuses on the

processes of knowledge translation and research utilization in the iCCM policy formulation process in Niger.

Finally, the conclusion (Chapter 7) offers a summary of results, discusses the dissertation's strengths and limitations, and suggests directions for future research on structural determinants of policy content and policy formulation processes at the national and global levels.

Chapter 2. Literature review

2.1 Brief history of global child survival initiatives

In the past 50 years of global health policy, institutional support for providing care at household or community levels has waxed and waned, tracing a policy cycle that is now once more in ascendance. At all times, community-level programs have been justified as extending coverage of basic health services and improving equity and access to care. Already in the late 1960s and early 1970s when the movement for primary health care emerged, works such as John Bryant's *Health and the Developing World* (1971) criticized the transplantation of the hospital-based health care system to developing countries (Cueto 2004). At the same time, Carl Taylor of the Johns Hopkins School of Public Health was promoting the Indian rural health care system as a model for reaching populations marginalized by the facility-based health care system; in Communist China, “barefoot doctors” aimed to achieve the same end. Various models using auxiliary health workers were discussed in *Health by the People* (1975), a WHO publication including a chapter on Niger’s village health teams, consisting of a CHW and a midwife (Fournier and Djermakoye 1975). Given their experience with village workers inside communities, Christian missionaries were also influential in the intellectual movement in favor of policies using community health workers, and in 1974, the collaboration was formalized between WHO and the Christian Medical Commission (Cueto 2004). Two years previously, WHO had created the Division of Strengthening Health Services, which focused on providing and more “basic health services” projects. In 1975, the debate was further stocked by the joint WHO-Unicef publication *Alternative Approaches to Meeting Basic Health Needs in Developing Countries*, which criticized facility based strategies as a “failure” (Djukanovic and Mach 1975).

The WHO's conference in Alma-Ata in 1978 in many ways capped off the consensus that had already been built around primary health care and community-level approaches. The conference's declaration emphasized the construction of health posts in poor rural and urban areas and promoted the empowerment of communities (WHO 1978). However, little guidance was provided as to how to operationalize these recommendations. Alma-Ata was criticized for being too broad and idealistic; in response, the 1979 Bellagio conference proposed the next iteration of the idea: selective primary health care. The conference was organized around an article calling for an evidence-based attack on specific diseases, notably including malaria, pneumonia, and diarrhea (Walsh and Warren 1979), and its attendance included influential persons such as Robert S. McNamara, head of the World Bank and former U.S. secretary of defense, as well as top officials from USAID and the Canadian International Development Agency (CIDA) (now the Department of Foreign Affairs and Trade and Development, DFATD). The selective approach to primary health care was justified by concerns of expediency: "The goal set at Alma Ata is beyond reproach, yet its very scope makes it unattainable because of the cost and numbers of trained personnel required" (Walsh and Warren 1979).

In the following years, programming increasingly tended to follow the route of selective primary health care, usually according to the Growth Monitoring, Oral Rehydration, Breastfeeding and Immunization (GOBI) framework of priority interventions. GOBI was notably promoted by James Grant, Unicef's charismatic leader, and while supporters of primary health care continued to influence the debate, the selective approach received added support after the successful eradication of smallpox in the 1980s, following the creation of WHO's Expanded Program on Immunization (EPI) program in 1974. U.S. agencies, the World Bank, and Unicef all created programs that prioritized certain components of GOBI

(especially immunization and oral rehydration therapy), creating noted tension between Unicef and WHO, which remained a center of support for a holistic vision of primary health care (Cueto 2004). Nonetheless, WHO programming followed suit with the creation of programs specifically targeting acute respiratory infections (ARI) and diarrheal diseases, Control of Diarrhoeal Disease (CDD). The priorities encapsulated by GOBI include some key components of iCCM policy; however, in the 1980s, hospital-based approaches to health care were ascendant, despite the enthusiasm for community participation expressed a decade earlier. At the same time, the first field trials of community-level approaches suffered from implementation problems, such as inadequate supervision, a lack of ongoing training, and poor logistical and financial support, leading to poor quality of care (Heggenhougen, Muhondwa et al. 1987; Walt 1990; Frankel 1992) (Berman, Gwatkin et al. 1987). As a result of these political and scientific factors, community-based approaches were temporarily set aside.

Meanwhile, advocates for child health were becoming increasingly prominent in the global health policy world, notably including those at Unicef, which “became extraordinarily successful in mobilizing its own organization and others in support of the ‘child survival revolution.’” (Reich 1995). Under Unicef’s James Grant, the Task Force on Child Survival’s promotion of child health as a top-priority issue has been noted as a particularly effective advocacy instrument (Shiffman and Smith 2007). (Task Force members included Unicef, UNDP, WHO, the World Bank, the Rockefeller Foundation and the Carter Center.) Such an overwhelming impetus to improve outcomes in child health, in a period following the evidence gathering fomented by GOBI, laid the foundations for the advent of the Integrated Management of Childhood Illness (IMCI) algorithm in 1995, which organized case management for the most common and devastating childhood illnesses in the developing

world. Beginning with Tanzania and Uganda in 1996, IMCI was introduced to over 100 countries in the next decade, and the IMCI algorithm was widely hailed as a successful policy in hospital settings (Chopra, Binkin et al. 2012).

But while the IMCI program as articulated by WHO had three components (case management in facilities, health systems strengthening, and community-level care), the early focus of most country programs remained on the clinical management of childhood illness. The community-based component of IMCI (community IMCI or C-IMCI) was officially launched at the First IMCI Global Review and Coordination Meeting in Santo Domingo (D.R.) in September 1997, where attendees advocated for appropriate management of childhood illness at household and community levels (WHO 1997). At this same meeting, Unicef was appointed lead agency on C-IMCI, but internal disagreements hindered progress, and a 2005 evaluation of IMCI showed that implementation of C-IMCI had been slow to nonexistent in most countries (Bryce, Victora et al. 2005). Around the same time, a review of IMCI published by WHO pointed to other problems with the design of C-IMCI, such as its reliance on health workers on government facilities, despite their low rates of utilization (WHO, UNICEF et al. 2003).

While C-IMCI was struggling to get off the ground, policymakers worldwide were taking note of promising results in studies with community health workers. In the late 1990s and early 2000s, the potential contributions of community health workers were being positively reevaluated, in part due to the growing recognition of the ravages wrought by HIV/AIDS on health services' human resources and discussions on "task shifting" (Lehmann, Van Damme et al. 2009), as well as the effects of the brain drain. By 2004, researchers had established a body of scientific evidence substantial enough for a WHO/Unicef joint

statement on the management of pneumonia in community settings (WHO/UNICEF 2004). The home or community-level treatment of diarrhea using ORT, later combined with zinc, was at this time already widely accepted, and home management of malaria (HMM) was also proving efficacious (see the section below on the evidence for iCCM for further details). Further accrual of the evidence resulted in another WHO/Unicef joint statement in June 2012, promoting iCCM according to the definition used in this proposal: community-level treatment of malaria, diarrhea, pneumonia, malnutrition and newborn conditions by trained CHWs (WHO/UNICEF 2012). Implementation of iCCM is not yet widespread on the African continent, although many countries are moving toward adopting iCCM or policies that resemble it.

2.2 The evidence base for iCCM

In July 2012, WHO and Unicef issued a joint statement promoting iCCM, “an equity-focused strategy to improve access to essential treatment services for children” (WHO/UNICEF 2012). This announcement followed upon previous joint statements on home visits for newborns and pneumonia treatment, which presented a strong case for the effectiveness of community-based care from CHWs (WHO/UNICEF 2004; WHO/UNICEF 2004). Currently, the full heft of the international policy arena is squarely behind iCCM based on an accumulation of research over two decades, as indeed iCCM was selected from a number of available models for managing childhood illness at the household or community level. Several of these models use CHWs for tasks including basic surveillance with facilitated referral (CHWs sometimes provide first dose of antibiotics or ACTs), CHW-directed fever management using a simple algorithm, home management of malaria (HMM), case management of pneumonia by CHWs, and integrated multiple disease

case management (essentially iCCM), each of which include a constellation of clinical tools (antibiotics, RDTs, ACTs) (Winch, Gilroy et al. 2005).

In the mid-2000s, evidence of a mortality impact of these programs existed only for pneumonia case management by CHWs (hence the WHO/Unicef joint statement in 2004) and family-directed fever management, which did not use CHWs. Today, CCM programs have greater evidentiary support, although there is still relatively little evidence of the effectiveness of integrated, community-level treatment policies with the specific characteristics of iCCM. A 2011 review article evaluated the scientific evidence for programs delivering curative treatments for malaria, diarrhea and pneumonia in Africa, and found that large and significant reductions in under-5 mortality were reported, though only six studies were conducted in sub-Saharan Africa between 1995 and 2005, all in West African countries (Benin, Ghana, The Gambia) (Christopher, Le May et al. 2011). The programs under study included both nationwide programs and small-scale interventions initiated for research purposes, but none included fully integrated care or the full array of curative treatments included under iCCM (antibiotics, ACTs, and ORS with zinc). Indeed, while the integration of health services is intuitively appealing, there is still a paucity of evidence as to whether integration actually improves outcomes and access to services (Shigayeva, Atun et al. 2010). The notion of integration has roots in organizational theory, and has been found to reduce fragmentation and duplication and improve the sustainability of communicable disease programs; however, the impact of integrated policies on patient outcomes remains understudied.

Nonetheless, there have been some tests of integrated programs for child illness, including a community-based trial in Zambia piloting the use of CHWs to treat uncomplicated malaria

with artemether-lumefantrine and nonsevere pneumonia with amoxicillin. Of children with non-severe pneumonia (N=3,125), 68.2% in the intervention arm received early and appropriate treatment compared to 13.3% in the control arm (RR 5.32, 95% CI: 2.19-8.94) (Yeboah-Antwi, Pilingana et al. 2010). Study authors concluded that the approach might help reduce overuse of ACTs as well as provide early and appropriate treatment to sick children. Furthermore, though the symptoms of malaria and pneumonia overlap significantly (Kallander, Nsungwa-Sabiiti et al. 2004), CHWs have been shown to be able to distinguish between them using clinical criteria, agreeing with a pediatrician's breath readings 85% of the time and prescribing anti-malarials in 96% of children with a positive RDT, in a Ugandan study (Kallander, Nsungwa-Sabiiti et al. 2004; Mukanga, Babirye et al. 2011) At least one earlier study also suggested that broader (i.e. integrated) roles for CHWs, with the treatment of diarrhea, pneumonia, and malnutrition, improved utilization of CHW services (Curtale, Siwakoti et al. 1995)

In contrast, a large body of evidence buttresses iCCM from the direction of each individual pathology and its management at the community level. Various studies have shown that CHWs can detect pneumonia using a watch; for example, in a study of 96 CHWs in eastern Uganda, CHWs were able to identify rapid breathing in under-5 children with a sensitivity of 75% and specificity of 83% (Källander, Tomson et al. 2006). In a community trial of 28 randomized clusters testing community case management of severe pneumonia by lady health workers, the intervention group received full treatment with instructions to mothers, while the control group received the first dose antibiotics with referral to a health center (Bari, Sadruddin et al. 2011). Cluster-adjusted treatment failure rates by day 6 were significantly reduced in the intervention clusters with a risk difference of 8.9% (95% CI – 12.4 to –5.4); barriers to obtaining care included transportation, cost, and distance to a health

center. Furthermore, the positive results of this first rigorous randomized trial of community case management of pneumonia are consistent with other sources of evidence, such as Nepal's 20 years of experience with the community-based management of childhood pneumonia (Dawson, Pradhan et al. 2008).

The inclusion of diarrhea in models of home- or community-based care has been more easily accepted than pneumonia or neonatal conditions, in large part because its treatment requires no medicines whose power to prescribe is reserved for higher-level actors in the health system, usually doctors. Indeed, simple oral rehydration solutions have been recommended since the 1970s to reduce deaths from diarrhea within the community, though in many ways it remains a neglected area today. A 2010 systematic review of the evidence for ORS use in the home included no fewer than 169 studies, and used meta-analysis to estimate that home ORS use can prevent 93% of deaths from diarrhea (Munos, Walker et al. 2010). The addition of zinc, which has been shown to reduce the duration and severity of diarrhea, has been recommended by WHO since 2004 (Walker and Black 2010).

The status of home- or community-based treatment programs for malaria have changed in recent years with the introduction of ACTs, a much more expensive class of drugs than the previous generation (chloroquine, sulfadoxine/pyrimethamine). Furthermore, the emergence of resistance to ACTs is greatly to be feared, as there are no other drugs currently available, a situation which can make policymakers reluctant to put these drugs in the hands of lesser-trained cadres of health workers. There are numerous programmatic examples of community-level programs to treat malaria (Winch, Bagayoko et al. 2003), as well as lessons from the home management of malaria (HMM) (Gyapong and Garshong 2007), though many of these studies pre-date the era of ACTs. A review of CHW models found that

programs for presumptive treatment of malaria for children with fever had the potential to increase the correct administration of treatment regimens at home, decrease malaria morbidity, and improve referral when facilitated referral mechanisms are included (Winch, Gilroy et al. 2005). In any case, the high malaria burden in many countries of sub-Saharan Africa strongly motivates its inclusion in integrated approaches to childhood illness.

There remain a number of worries about iCCM policy, less about the clinical benefits of integrating care than regarding the use of CHWs, about which some policy-makers remain circumspect. For example, although there is a growing body of literature presenting evidence in favor of allowing CHWs to treat sick children for pneumonia with antibiotics, this aspect of iCCM is among the least supported by policymakers (Winch, Gilroy et al. 2005; Dawson 2008) and indeed a recent review questioned how well community level treatment of childhood pneumonia can work in sub-Saharan African countries, which differs from Asian countries in their malaria burden and less developed community health infrastructure (Druetz, Ridde et al. 2014). The most commonly cited concern about CHWs providing treatment with antibiotics is potential misuse of the drugs leading to antibiotic resistance; however there is little evidence either to support or disprove this notion. However, worries may be warranted given findings on iCCM programs showing that consistent, accurate treatment remains a challenge (Cardemil, Gilroy et al. 2012; Mukanga, Tiono et al. 2012), especially in the absence of effective supervision (Laínez, Wittcoff et al. 2012).

Finally, while a 2007 follow-up to the World Health Report 2006 (*Working Together for Health*) cited “robust evidence” that CHWs could contribute to improved outcomes in child health, the report also noted that the positive impact of CHW programs was not consistent and the

quality of services was sometimes poor (Sanders and Lehmann 2007). According to the report's authors, these problems can be overcome by the proper selection, training, support, and supervision of CHWs, the absence of which have unnecessarily undermined the credibility of CHW programs, due to "unrealistic expectations, poor planning and an underestimation of the effort and input required to make them work." Thus, questions remain about the sustainability of such programs and their long term effects on quality of care for the poor, rural populations they serve (Haines, Sanders et al. 2007). Nonetheless, movement is being made toward providing further guidance in task-shifting as a system-level intervention, for example with WHO's guide to task-shifting to optimize maternal and newborn interventions (WHO 2012).

In sum, the scientific evidence in favor of CCM programs is not insubstantial; however, there is still relatively little evidence of the effectiveness of integrated, community-level treatment policies with the specific characteristics of iCCM. This situation will doubtless change as iCCM programs are more widely implemented and start to be evaluated.

Chapter 3. Study site: Niger

3.1 Niger's socio-historical context

Niger is a relatively young state in the international order if not in sub-Saharan Africa, gaining independence from France in 1960 and experiencing alternating periods of autocratic rule and, for the past two decades, democratic governance, punctuated by *coups d'état* in 1996, 1999 and 2010. It is also a particularly weak state, ranking at the bottom of international indices for “political stability and absence of violence” and “control of corruption” (Kaufman, Kraay et al. 2008). Niger's pressing challenges also include a demographic context of high population growth, while natural resources and arable farmland are being diminished by global warming and desertification. Niger's long history of food crises, with 20th-century famines named “*poitrine large*” and “*vendre les enfants*” (“large belly,” “sell the children”), continues in the present, with major food crises in 2005-2006 and 2010, and will likely worsen if current ecological and demographic trends continue.

Over the past two decades Niger suffered several periods of instability, beginning with the coup ending the Third Republic in January 1996 by Colonel Ibrahim Barre, who assumed the presidency in July of the same year but was assassinated in 1999. The constitution of the Fifth Republic was approved by voters in July 1999, who then elected President Mamadou Tandja, who was later to create the network of rural health posts that served as the basis for implementing iCCM in Niger. Aside from the second Tuareg rebellion in 2007-2008, the next ten years of Tandja's rule were relatively quiet, until his efforts in 2009 to extend his term by amending the constitution known as *Tazartché*. A coup in February 2010 led to the establishment of the Supreme Council for the Restoration of Democracy under Salou Djibo, followed by the election of current President Mahamadou Issoufou in April 2011 in a process deemed in accordance with international electoral standards. However, Issoufou's

presidency has thus far been beset by significant threats to national security, including the fall of Muammar Gaddafi's regime in Libya, violent attacks by Boko Haram in northern Nigeria (and recently in Bosso, Niger), and the *coup d'état* in Mali in April 2012, which sent waves of refugees into western Niger.

The structural adjustment era has had long-lasting effects on the Nigerian economy and technocratic cadre; its privations were particularly unwelcome as they coincided with the end of high uranium prices in the early 1980s. As in other countries, adjustment had the effect of re-orienting priorities toward the short term, in part by privileging Finance Ministries over Planning Ministries (Lavigne Delville and Abdelkader 2010). Furthermore, the IMF and the World Bank had a heavy hand in policy choices, and critics have pointed out donors' tendency to bypass institutions and favor *ad hoc* over systematic solutions. These circumstances lead to a "dramatic degradation of the capacities of planning and leadership ... in large part the result of restructuring imposed by outside funders, at a time when 'less government' was ascendant" (Polet 2009). A socio-anthropological study of international aid in Niger based on qualitative interviews with government figures reported a consensus that the state was significantly weakened or even crumbled during this period (Lavigne Delville and Abdelkader 2010).

The same study, tellingly titled "Don't Look a Gift Horse in the Mouth" ("*A cheval donné on ne regarde pas les dents*"), describes a "vicious cycle" in Niger which state passivity stimulates donor action, and vice versa, with the result that national policymakers tend to renounce responsibility or initiative (Lavigne Delville and Abdelkader 2010). Outside donors remain very powerful in Niger given the country's few technical and financial resources; Niger received approximately \$400 million in aid in 2008, representing 50% of its public

expenditure (EURODAD 2008). Since 2000, there has been a greater tendency for donors to follow countries' direction regarding national strategies, a principle enshrined in the 2005 Declaration of Paris, but the power dynamics have not been modified: multi- and bi-lateral organizations can “finance human, technical, institutional, and political resources to standards that are quite far from those accessible using the State's own resources” (Lavigne Delville and Abdelkader 2010).

The characteristics of the Nigerien state as described by Lavigne Delville and Abdelkader dovetail with descriptions of the neopatrimonial state outlined above, including its lack of strategy and direction, the fact that is not well anchored in society, and the prominence of clientelistic relations. The rural sector remains neglected, for example in Niger's Poverty Reduction Strategy, the writing of which the World Bank is said to have participated in extensively. Furthermore, the “President's Special Program” (*Programme spécial du Président*), which funded President's Tandja's project of rural health posts (*cases de santé*) involved in iCCM, was singled out by respondents as an “extreme case of the personalization of public funds” used to achieve political ends (Lavigne Delville and Abdelkader 2010).

3.2 Nigerien health system in historical perspective

With one of the world's least dense populations (only 12.5 people/sq. km in 2010), and extremely scarce human resources in health (0.03 physicians per 1,000 population), Niger is challenged with providing even basic care to a far-flung population (WHO-AFRO 2006). Niger also has the world's highest birth rate, 7.6 children per woman (DHS 2012). The child mortality rate has dropped significantly in recent years, from 226 deaths per 1000 live births in 1998 to 128 deaths in 2009: according to estimates using the Lives Saved Tool (LiST), the main causes of this reduction were the introduction of insecticide-treated bednets (25% of

the decrease); care-seeking for malaria, diarrhea, and pneumonia (22%); and improvements in nutritional status (19%) (Amouzou, Habi et al. 2012). Still, the current child mortality rate remains high even for the region, and the top causes of death are pneumonia (18%), malaria (15%), diarrhea (15%), with neonatal deaths equal to 25% of all deaths (WHO/UNICEF 2012).

It is useful to put Niger's health system in historical perspective. The first community-based approaches in Niger date to the 1960s, with the creation of village health teams (*équipes de santé villageoises*) whose members, called *secouristes-hygiénistes*, provided basic preventive and curative care in their home communities. This program included at-cost payment for drugs to allow the *secouristes* to renew their supplies; however, services were provided for free. In 1974, there were 780 *secouristes* in 396 villages (Fournier and Djermakoye 1975) and program was reinforced by Niger's adhesion to the Declaration of Alma-Ata in 1978, which called for expanding access to primary health care and collaboration with communities. However, the village health teams began to fade during the 1980s, finally disappearing in the 1990s following a "lack of results obtained in comparison to the resources expended" (MSP 2008).

The 1987 Bamako Initiative, calling for community financing as a mechanism to achieve universal access to primary health care, was influential in Francophone African countries including Niger (Gilson 1997). Following political upheavals in the early 1990s, the Nigerien government decided to generalize the Bamako Initiative in 1995 in a reform process that included the implementation of user fees, alongside enhanced community participation and utilization of essential medicines. However, subsequently, service utilization remained extremely low, as the state had reduced its financial contribution and not all patients had the means to pay (Ridde and Diarra 2009). In the Tillabéri region, the creation of a cost

recovery program resulted in a 41% reduction in the number of patients in the eight health centers followed in the study (Meuwissen 2002).

The cost recovery regime persisted until 2006, at which point 85% of private health expenditure on health was out-of-pocket (Ridde and Diarra 2009). In April 2006, Nigerien President Mamadou Tandja announced the removal of user fees for health services first for pregnant women, and then for children under five. In the years since, studies of the reform's effects have been generally positive: the number of consultations by children under 5 increased “suddenly and immediately” after the policy change by 10,427 consultations per quarter, equivalent to a 98% increase in utilization by target groups (Lagarde, Barroy et al. 2012) and health services workers found the change in policy “noble and beneficial” (Ridde, Diarra et al. 2011). In this sense, the policy has been a success; however, the state's reimbursement system is in arrears up to 6 billion CFA (US\$12 million) and is highly dysfunctional, leading to fears about the system's immediate, not to speak of long-term, sustainability (Ousseini 2011; Lagarde, Barroy et al. 2012; Ridde and Olivier de Sardan 2012).

With respect to child survival approaches, a number of strategies have been implemented in recent years to address consistently high child mortality rates. In 1994, the USAID program BASICS began testing early integrated approaches called “combined case management” (CCM), including community-based interventions, which paved the way for the arrival of IMCI in 1996 (Legros, Tawfik et al. 2002). However, while implementation of IMCI had begun in 1997, it focused on the first two components of this policy (clinical management of childhood illness and health systems strengthening) and not the third component (community-level care). Indeed, a 2001 review of IMCI, which reported that little progress

had been made on this front (Konate and Zataka 2004). Implementation of the community-based IMCI (C-IMCI) began in 2003-2004 and proceeded slowly.

At the same time, infrastructural improvements were underway in the Nigerien health system. A new cadre of CHWs (called *agents de santé communautaire*) began to be trained and placed in a network of rural health posts (*cases de santé*). CHWs were trained for 6 months and legally permitted to prescribe antibiotics, ACTs, and ORS, though supplies were highly inadequate (Degbey 2004). Funds to pay the CHWs' salaries and construct the rural health posts were provided by President Tandja's *Programme spécial* beginning in 2001 (Bensaid and Mistycki May 2011). By 2003, there were already 1,201 health posts, though few were yet fully staffed and operational (MSP 2005); today there are over 2,500, representing the health infrastructure that would form the basis of iCCM.

In sum, the Nigerien health system has made significant improvements in recent years, becoming much more financially and geographically accessible to poor, rural populations. However, the system remains fragile and chronically underfinanced, as it competes for government and aid funds with the many other pressing priorities in one of the world's poorest countries.

Chapter 4. Epistemic communities in global health and the development of child survival policy: a case study of iCCM

4.1 Abstract

Nearly all African countries have recently implemented some form of integrated community case management of childhood illness (iCCM), a strategy aimed at reducing child mortality by providing curative care for common yet fatal childhood illnesses. This case study describes the evolution of iCCM at the global level using the theory of epistemic communities first outlined by Haas, which explains how international policy coordination on technical issues takes place via transnational expert networks. We draw from in-depth interviews with global policy-makers (n=25), a document review (n=72) and co-authorship network analysis of scientific articles on iCCM. We find that members of the iCCM epistemic community were mainly mid- to upper-level technical officers working in the headquarters of large norm-setting bodies, implementing partners, funders and academic/research groups in global health. Already linked by pre-existing relationships, the epistemic community was consolidated as conflicts were overcome through structural changes in the network (including or excluding some members), changes in the state of technology or scientific evidence, shifting funding considerations, and the development of consensus through argument, legitimation and other means. Next, the epistemic community positioned iCCM as a preferred solution via three causal dynamics outlined by Haas: 1) responding to decision-makers' uncertainty about how to reduce child mortality after previous policies proved insufficient, 2) using sophisticated analytic tools to link the problem of child mortality to iCCM as a solution, and 3) gaining buy-in from major norm-setting bodies and financial and institutional support from large implementing agencies. Applying the epistemic communities framework to the iCCM case study reveals the strengths and

weaknesses of a focused policy enterprise with highly specialized and homogenous disciplinary origins, which allows for efficient sharing of complex, high-level scientific information, but may exclude voices from relevant methodological areas, operational actors or country-level stakeholders.

4.2 Introduction & Background

In 2013, an estimated 6.3 million children under five died worldwide, with almost a third dying from pneumonia, diarrhea and malaria, a percentage that rises to nearly 40% in sub-Saharan Africa (You, Hug et al. 2014). Integrated community case management of childhood illness (iCCM) is a strategy to expand access to life-saving curative care for children with these diseases using community health workers (**Figure 2**). Designed by a transnational network of technical experts and leading to a WHO/Unicef Joint Statement (WHO/UNICEF 2012), iCCM was subsequently showcased in a 2012 supplement in the American Journal of Tropical Medicine and Hygiene (Young, Wolfheim et al. 2012). ICCM has been promoted by prominent stakeholders in child health at the global level, including WHO, Unicef, USAID and others, with funding provided by bi- and multi-lateral agencies and private foundations. To date, nearly all African countries have adopted some form of iCCM, including CCM for malaria, diarrhea or pneumonia or some combination thereof (Rasanathan, Muñiz et al. 2014).

Figure 2 Definition of iCCM

The provision by community health workers (CHWs) of integrated diagnosis and treatment for children under five of:

- (i) pneumonia with oral antibiotics,
- (ii) diarrhea with zinc and oral rehydration salts (ORS),
- (iii) malaria with artemisinin combination therapy (ACTs) and other antimalarials.

Source: Adapted from WHO/Unicef Joint Statement: Integrated community case management (2012)

Preventable child deaths have long been a focus of global health policy-makers, whose proposed interventions consistently target malaria, diarrhea and pneumonia, among other illnesses. Campaigns in the 1960s and 1970s such as malaria eradication, as well as the primary health care movement epitomized by the Alma Ata conference in 1978, represented major efforts to reduce deaths from these diseases (WHO 1978). These initiatives faltered as the 1980s ushered a sustained financial crisis, whose effects on health systems in LMICs were aggravated by fiscal austerity measures instituted under structural adjustment. Global health policy-makers shifted to more targeted approaches such as selective primary health care, as in Unicef's GOBI strategy (growth monitoring, oral rehydration, breastfeeding, immunization) (Walsh and Warren 1979; Cueto 2004). Later in the 1990s, WHO came out with Integrated Management of Childhood Illness (IMCI), a diagnostic and treatment algorithm for malaria, diarrhea, pneumonia, measles and malnutrition (WHO 1997). First introduced in Tanzania and Uganda in 1996, IMCI was adopted in over 100 countries. However, expected reductions in child mortality subsequently failed to materialize, as IMCI's impact was limited mainly to facilities and not community settings where most child deaths occurred (Bryce, Victora et al. 2005).

The articulation of the Millennium Development Goals in 2001 further focused global policy-makers' attention on reducing child mortality. Discussions variously emphasized interventions for specific pathologies (malaria, HIV/AIDS, pneumonia); a renewed emphasis on vaccine-preventable diseases following the development of vaccines against *Haemophilus influenzae* type b (Hib), pneumococcal disease and rotavirus; and the perennial problems of under-nutrition and malnutrition. Concurrently, the universe of health policy actors grew institutionally broader (Glass, Guttmacher et al. 2012). With respect to child health, U.N. agencies (primarily WHO and Unicef) increasingly shared the stage with

bilateral aid agencies, private foundations and non-governmental organizations (NGOs) (WHO, UNICEF et al. 2003). Among policy discussions within and across these multiple policy networks, iCCM would emerge as a global strategy highly endorsed by international actors as a means to address child survival in Africa.

This study describes the origins of iCCM policy and is linked to a policy analysis of iCCM in six countries in sub-Saharan Africa. We aimed to examine underlying causal determinants of iCCM's rise to prominence at the global level and identify processes facilitating network formation and reasons for the network's effectiveness. The case study takes as its endpoint the issuance of iCCM policy, defined as the 2012 WHO/Unicef Joint Statement on iCCM (WHO/UNICEF 2012) and preceding implementation guidelines issued by USAID and the CORE Group (USAID, CORE_Group et al. 2010). We first present our methodology for data collection and multi-stage analysis, then present results using the epistemic communities framework to show how the iCCM policy community initially formed, how members resolved internal conflicts about specific points of policy and how they positioned iCCM as a preferred policy solution. Finally we review our findings and draw lessons from this case study with resonance for global health policy-making more broadly.

Epistemic communities framework

Various theoretical frameworks have been proposed to analyze the networks of individuals responsible for national and global policy, which is increasingly made by diverse sets of actors connected through non-traditional governance arrangements (Ostrom, Tiebout et al. 1961). The range, diversity, and fluidity of actors working on policy issues is captured by the concept of policy networks, which have variously been described as issue networks (Heclo 1974), policy communities (Wright 1988; Coleman and Skogstad 1990), global and

transnational policy networks (Slaughter 1997; Walt, Lush et al. 2004; Stone 2008), advocacy networks (Keck and Sikkink 1998), and epistemic communities (Haas 1992). Policy network theory, in addition to providing a helpful heuristic to describe who participates in policymaking (Atkinson and Coleman 1992), can also be used to explain policy outcomes through examinations of network structure (Howlett 2002; Provan, Fish et al. 2007; Sandström and Carlsson 2008).

In his seminal 1992 article, Haas proposed “epistemic communities” as agents of policy change in a framework bringing together elements of structural, institutional and normative theories (Haas 1992). Epistemic communities are networks of technical professionals who gather, synthesize and interpret technical bodies of knowledge and as such play a strong role in determining which policies are selected in highly specialized policy arenas. Under Haas’ framework, epistemic communities are defined by the fact that their members hold shared 1) values / normative beliefs, 2) causal beliefs, 3) notions of validity, and 4) a common policy enterprise, or set of common practices associated with specific policy problems (Haas 1992). Epistemic communities influence change by articulating problems and potential solutions, framing the issues for debate, proposing policies and sometimes offering funding (Haas 1992; Hafner and Shiffman 2013). In so doing, members of epistemic communities promote the solutions they favor via three causal mechanisms: 1) by relieving decision-makers’ uncertainty about which policies best address complex issues; 2) by engaging in interpretation of so-called raw data or observations, filtering them through worldviews, disciplinary perspectives, and stated and unstated beliefs; and 3) by seeking to institutionalize their preferred policy solutions (Haas 1992).

The epistemic communities approach is well-adapted to analyzing policy networks like the one around iCCM, whose transnational membership of technocrats and researchers of diverse national origin was nonetheless homogenous in terms of educational status (including many medical doctors and PhDs), disciplinary background or area of specialization (usually medicine or public health), and socio-professional profile. Together, these actors were, or were in dialogue with, policy-makers in global health agencies, donor organizations, and research universities, and were thus positioned to relieve their uncertainty about policy options, interpret data and institutionalize policy solutions, following the causal mechanisms driving epistemic communities. The epistemic communities framework is also highly relevant to global public health policy making because it examines power dynamics deriving from experts' authority on technical matters and explores how large organizations broker the creation of far-reaching policies.

4.3 Methods

Data collection took place from May to August 2013 and included a document review (N=72 documents, **Table 1**) and semi-structured in-depth interviews (N=25, **Table 2**). We used initial purposive selection of respondents followed by a snowball approach, targeting key informants involved in or knowledgeable about iCCM policy formulation, including technical officials working at major international agencies, bilateral aid agencies, non-governmental organizations (NGOs), private foundations and academic/research organizations. Interviewees were associated with policy communities focusing on specific pathologies including malaria, pneumonia (often linked with diarrhea and/or the broader child survival community), and more rarely nutrition or health systems issues. Interviews were conducted mainly by telephone and lasted approximately 45 minutes; these were audio recorded and transcribed verbatim.

Table 1 Contents of document review

	<i>Number of documents</i>
<i>Global policy</i> (guidelines, recommendations, strategic plans)	15
<i>Meetings</i> (conference reports, meeting minutes, PowerPoint presentations)	19
<i>Scientific journal articles</i>	16
<i>Programmatic documents</i> (program evaluations, working papers, operational research, calls for proposals)	8
<i>Implementation tools</i> (guides, training manuals, planning documents)	9
<i>Public communications</i> (websites, fact sheets, declarations of support)	5
TOTAL	72

Table 2 Organizational membership of interview respondents

	<i>Number of interviews</i>
<i>Multi-lateral agencies</i>	11
<i>Bilateral agencies</i>	7
<i>NGOs/private foundations</i>	3
<i>Academic/research organizations</i>	4
TOTAL	25

Preliminary data analysis began with the document review, which we used to populate a timeline capturing key events in iCCM global policy creation and compare how iCCM policy and related topics were framed by individuals, groups, and institutions in terms of themes, reasoning, and interpretation of the data, as well as underlying values, principles, and causal beliefs (Eyles, Robinson et al. 2009). For interviews, we performed primary thematic analysis using NVivo 9 software to apply codes on the origins of iCCM; policy content; policy-making processes; actors; and the types and uses of scientific evidence (QSR 2010). Emerging themes and links to theory (including policy network theories and the epistemic communities frameworks) were documented and discussed by research team members as data collection was ongoing. The epistemic communities approach was selected as best according with observations that actors were mostly technical and acted in a transnational policy space; the framework also captured the interplay between ideas and institutions better than competing theories.

We then applied the epistemic communities approach to emerging understandings of policy creation, refining our analysis to define the epistemic community's membership and using the theory's three causal dynamics – uncertainty, interpretation and institutionalization – to explain how iCCM came to the fore in the policy sphere. To obtain greater clarity about the shape and structure of the epistemic community, we used co-authorship network analysis to examine how authors formed a larger network structure. Relevant publications were retrieved using the search terms “community case management” in ISI Web of Science, excluding irrelevant categories (e.g. GERONTOLOGY). Abstracts were read to exclude studies in high-income countries, resulting in 62 publications and 276 unique authors from 2005-2013 (no lower limit for search dates; upper limit of June 2013). Network analyses were performed using Science of Science (Sci2) software, version 1.0 (Indiana University).

This study was deemed exempt from ethical review by the Johns Hopkins Bloomberg School of Public Health.

Study limitations

It was not possible to interview all targeted key informants. Approximately 35 people were contacted, resulting in 25 interviews. A comparison of respondents and non-respondents found no significant differences in the profile of these two groups. As in many types of qualitative research, respondents may have sought to reflect well on themselves or the group they represent. We mitigated this bias by triangulating among data types and sources. Finally, the authors of this analysis are or have been affiliated with organizations involved in iCCM policy development. To improve the trustworthiness of the findings, we prioritized viewpoints from data sources not associated with these organizations in matters involving

them, and checked emerging analyses against possible social desirability bias and other biases.

4.4 Results

In this section, we describe how the epistemic community around iCCM coalesced and how members reached consensus by resolving conflicts over values/normative beliefs, causal beliefs, notions of validity, and a common policy enterprise. We then describe how the epistemic community used the dynamics of uncertainty, interpretation and institutionalization to promote iCCM as a favored solution in the global health policy sphere.

Figure 3 presents an overall timeline of events and accompanying policy documents important in the creation of iCCM.

Figure 3 Timeline of events related to global iCCM policy development

<u>Events</u>		<u>Policy documents</u>
1990s	Sept. 1997. First global review meeting on IMCI highlights need for progress on C-IMCI	1992. IMCI strategy (WHO)
2000	2000s. Ongoing funding for child survival programs from USAID and CIDA includes CCM-like interventions under programs including ACSD, BASICS, the Catalytic Initiative, and others	2000. “Key Family Practices” for C-IMCI (WHO/Unicef)
2001		
2002		
2003		2004. WHO/Unicef Joint Statements: “Management of Pneumonia in Community Settings” and “Clinical Management of Acute Diarrhea”
2004		2004-05. Home Management of Malaria (WHO/RBM)
2005		2006. CHW Intervention models for child illness (WHO/Unicef)
2006		2007. “Community-Based Management of Severe Acute Malnutrition” (WHO/WFP/Unicef)
2007		2009. Global Action Plan for Pneumonia (WHO)
2008		2010. - “CCM Essentials” guide (USAID / CORE Group) - 63 rd WHA Resolution supporting CCM for pneumonia
2009		2012. WHO/Unicef Joint Statement: iCCM
2010		
2011		
2012		

4.4.1 An epistemic community forms around iCCM

Over the course of a decade or more, actors working on different facets of child survival came together to form an epistemic community that would design iCCM as a way to meet the Millennium Development Goal (MDG) on child survival. After giving an overview of the child survival policy landscape and iCCM policy community that emerged out of it, we attempt to understand this process using co-authorship analysis to describe the growth of linkages, and use interview data to describe the qualitative nature of ties among epistemic community members.

First, networks of policy actors working on child survival in the late 1990s and early 2000s were organized along a number of axes, including specific pathologies, (malaria, diarrhea and pneumonia, nutrition), child survival programs (notably IMCI and C-IMCI), and broader issue areas such as child survival, health systems and community health workers (CHWs). These networks had varying degrees of overlap and spanned different organizations and departments, for example in the case of the malaria network, which linked officials from WHO (Global Malaria Programme, Tropical Disease Research Programme, Roll Back Malaria), USAID (PMI), and academic researchers working on malaria, among others.

Institutionally, the main actors who would become involved in the creation of iCCM at the global level were located at WHO, Unicef, bilateral aid agencies (USAID and CIDA, now DFATD), private foundations (principally the Gates Foundation), NGOs such as Save the Children and other members of the CORE Group, and academics and researchers (**Table 3**). Actors were mainly mid- to upper-level technical officers working in the headquarters of these agencies and were often connected via coordinating mechanisms such as the CORE Group, the Child Health Epidemiology Research Group (CHERG), and more recently the

Partnership for Maternal, Neonatal and Child Health (PMNCH) and the Countdown to 2015 Group (**Table 4**), as well as via meetings (such as an important 2001 Baltimore meeting on C-IMCI), evidence reviews (the 2002 Stockholm meeting on pneumonia) and global-level forums such as the Global Action Plan on Pneumonia (GAPP) process (see the timeline, **Figure 2**).

In June 2008, following initial discussions at meetings under the GAPP process, members of WHO, Unicef, USAID, Save the Children, the CORE Group, Karolinska Institutet and the Johns Hopkins University, among other organizations formed the CCM Task Force as a forum for facilitating iCCM policy development (see **Table 4** for details). Members of the CCM Task Force were mid-level technical staff of diverse national origin (including from LMICs) working out of agency headquarters, as well as researchers affiliated with mainly Western institutions. These actors worked to formulate the specifics of iCCM policy through ongoing meetings, reviews and communication, with sharing and consultation facilitated by the creation of a website (CCM.org) in 2011.

Table 3 Main organizations involved in iCCM policy development

	Early policy development (late 1990s – 2008)	Later policy development (2008-2012)
<i>WHO</i>	<ul style="list-style-type: none"> - Child and Adolescent Health Dept. involved in creating early guidelines for community-level IMCI; - ARI program solicited ongoing research and evidence reviews but reluctant to push for CCM-pneumonia despite positive findings; - Co-authored Joint Statements on CCM for pneumonia and diarrhea; - Roll Back Malaria publishes its “Home Management of Malaria” strategy. 	<ul style="list-style-type: none"> - WHO-led GAPP process convenes actors, raises support for CCM-pneumonia; - Steering committee member of CCM Task Force; - Supported operational research for and evaluation of iCCM; - 2010 WHA resolution supported CCM for pneumonia ; - WHO-TDR and the Global Malaria Program joined discussions on iCCM; - GMP administered RAcE funding from CIDA for iCCM beginning in 2012.
<i>Unicef</i>	<ul style="list-style-type: none"> - Failed to provide leadership on C-IMCI despite its responsibility for this policy, partly due to leaderships emphasis on other priorities; - Implemented Accelerated Child Survival (ACSD) program in 11 West African countries (2001-2005), case management not emphasized; - Co-authored Joint Statements on CCM for pneumonia and diarrhea; - Renewed focus on child survival following 2005 change in leadership. 	<ul style="list-style-type: none"> - Main implementer of Catalytic Initiative to Save a Million Lives, including large-scale iCCM programs in Africa (2008-2011); - Steering committee member of CCM Task Force; - Supported operational research for and evaluation of iCCM.
<i>USAID</i>	<ul style="list-style-type: none"> - Bureau for Global Health led BASICS program of child survival strategies, which initiates pilot studies of CCM approaches in a number African countries beginning in 2004; - Diffused CCM approaches throughout the African region in a series of meetings (Dakar 2005, DRC 2007, Madagascar 2008). 	<ul style="list-style-type: none"> - PMI (launched in 2005) brings enhanced funding possibilities after joining in later discussions of iCCM policy; - MCHIP (created in 2008 as USAID’s flagship maternal and child health project) served as the secretariat for the CCM Task Force.
<i>CIDA</i>	<ul style="list-style-type: none"> - Funded more than half of the ASCD program testing child survival interventions in West Africa. 	<ul style="list-style-type: none"> - Provided major funding for the Catalytic Initiative (CI), insisting on evaluations that measured iCCM’s impact on mortality; - Required implementation of iCCM as a conditionality mid-way through CI; - Funded several NGOs to implement iCCM in multiple countries.
<i>Gates Foundation</i>	<ul style="list-style-type: none"> - Provided grants to JHSPH for the development of the LiST tool; - Provided support to PMNCH for advocacy on child survival issues. 	<ul style="list-style-type: none"> - Co-funded the Catalytic Initiative; - A Gates call for proposals coins the name ‘iCCM’; - Funded operational research for and evaluation of iCCM.
<i>Save the Children</i>	<ul style="list-style-type: none"> - Leadership role within CORE Group in early work on creating a framework for C-IMCI; - Organized pilot studies of CCM-like approaches in a number of countries. 	<ul style="list-style-type: none"> - Ongoing programmatic work on CCM with operations research; - Strong individual advocates for child survival; - Steering committee member of CCM Task Force; - Involved in preparing the AJTMH supplement.
<i>Academic actors</i>	<ul style="list-style-type: none"> - JHSPH contracted by USAID and CIDA to support child survival work, reviewing CHW profiles, participating in drafting of joint statements and guidelines; anchors CHERG; contracted to externally evaluate ACSD; - Karolinska Institutet provided research on symptom overlap of malaria and pneumonia and home management of malaria; - Boston University performed early studies on antibiotics regimens. 	<ul style="list-style-type: none"> - JHSPH contracted by CIDA to externally evaluate Catalytic Initiative; - JHSPH review of ACSD points out need to focus on iCCM; - Karolinska wins one of several Gates funded iCCM implementation research protocols in collaboration with Malaria Consortium.

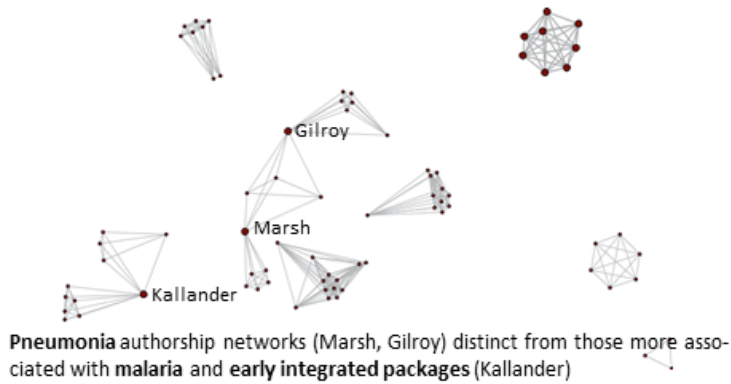
Table 4 Coordinating mechanisms' involvement in iCCM policy development

	Description	Membership	Early policy development (late 1990s – 2008)	Later policy development (2008-2012)
<i>CORE Group</i>	A coalition of non-profit global health organizations created in 1997 and funded by USAID.	- 70+ NGOs including Care, IRC, CRS, World Vision, PATH, Save the Children, several of which implement iCCM, among other child survival efforts;	- Contributed to producing C-IMCI framework; - Provided a forum for implementers to communicate and share best practices.	- Created guidelines and implementation tools for iCCM such as the “CCM Essentials” handbook (2010); - Member organizations implement iCCM under USAID and RaCE funding, among other sources.
<i>Child Health Epidemiology Research Group (CHERG)</i>	Established in 2001 primarily by WHO as an independent source of technical expertise on child health estimates.	- Technical experts from University of Toronto, JHSPH, London School of Hygiene and Tropical Medicine, UNC-Chapel Hill, etc.	- Estimation of levels and causes of child mortality using Global Burden of Disease data.	- Continued to highlight gaps in the coverage of evidence-based interventions and highlight iCCM's place in the continuum of care.
<i>Partnership for Maternal, Newborn and Child Health (PMNCH)</i>	Hosted by the WHO from 2005 to allow partners to “share strategies, align objectives and resources, and agree on interventions.”	- Academics; donors and foundations; health-care professionals; multilateral agencies; NGOs; partner countries; and the private sector.	- Promotion of LiST as a tool to select interventions; - Created the Countdown to 2015 partnership in 2005.	- Supported implementation of iCCM with Gates Foundation funding as part of the Catalytic Initiative. - Served as a locus for experts on child survival.
<i>Countdown to 2015</i>	Established in late 2005 as a multi-institutional collaboration to speed progress toward MDGs 4 and 5 on maternal & child health.	- Academics (LSTMH, JHSPH, Harvard), the Lancet, WHO, UNICEF, World Bank, Gates Foundation; also implementing partners such as JHPIEGO and SCF.	- Focused attention on the problem of access to health facilities and the major pathologies blocking progress on MDG4.	- Creation of country scorecards/dashboards linking core indicators to problems to be resolved.
<i>CCM Task Force</i>	Grew out of GAPP process in 2007-08 to track iCCM policy change and program status.	- Steering committee: UNICEF, WHO, USAID and Save the Children; - Other members: MCHIP (Secretariat), CORE Group, MSH, PSI, URC, JSI, and others.	N/A	- Established CCM.org website; - Consolidated available research evidence and existing implementation tools for CCM for broader dissemination; - Used matrices of work in specific countries to avoid duplication.

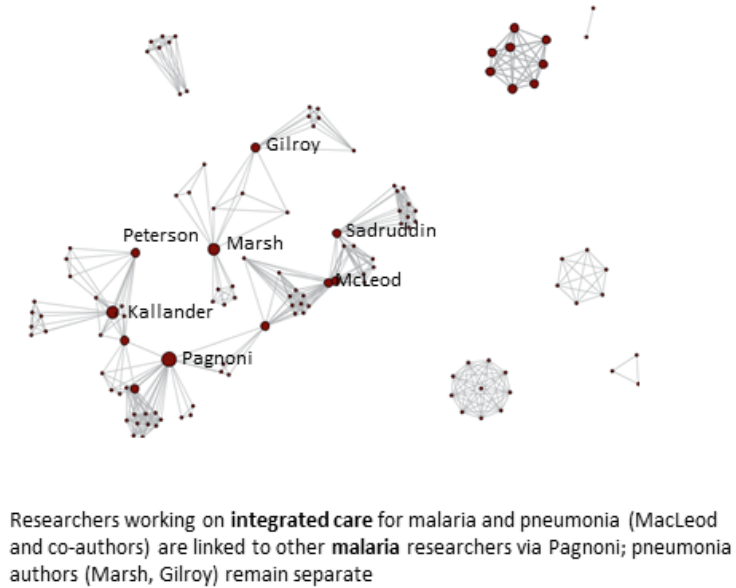
Co-authorship network analysis (**Figure 4**) demonstrates how the iCCM policy community, as represented by technical authors publishing in scientific journals from 2005 to 2012, were initially clustered by pathology, with distinct authorship communities linked to malaria (such as around K. Kallander, K. Yeboah-Antwi) and pneumonia (D. Marsh, K. Gilroy) visible as late as 2010 (network “A”). By the following year, links had been established between authors of the first CCM study including both malaria and pneumonia (Yeboah-Antwi, Pilingana et al. 2010) and the larger malaria group working on HMM in Uganda via a shared publication with malaria expert F. Pagnoni (network “B”). In 2012, many principal members of the iCCM policy network were linked through the publication of a 2012 supplement on iCCM in the *American Journal of Tropical Medicine and Hygiene* closely following the issue of the Joint Statement on iCCM in June of that year (network “C”). Accounting for delays inherent to the publication process related to manuscript preparation and peer review, the analysis highlights the increasing consolidation of actors around iCCM as researchers focusing on different pathologies begin to collaborate and publish together, with the academic literature mirroring the shape of policy. Although no specific “diarrhea” authorship community is visible, this is likely due to long-standing acceptance of CCM for diarrhea as highly safe and effective.

Figure 4 Evolving co-authorship network of publications including the term "iCCM"

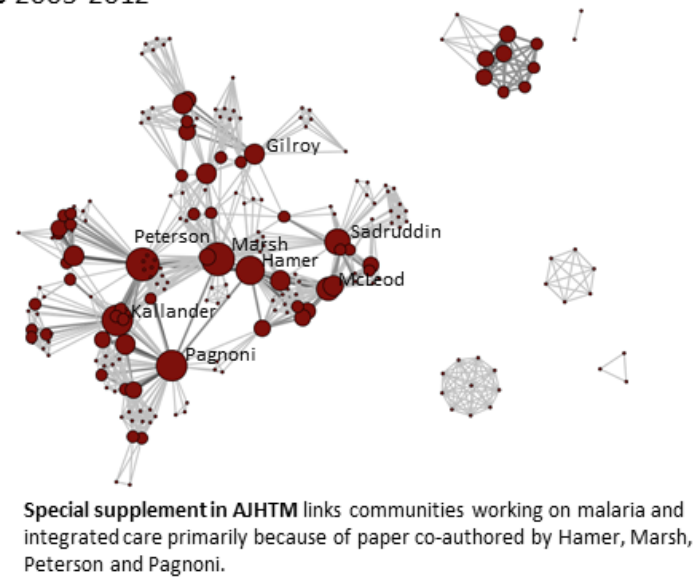
A 2005-2010



B 2005-2011



C 2005-2012



Co-authorship network analysis only documents formalized relationships and gives little indication of the depth, longevity or affective nature of ties between epistemic community members. In interviews, however, several respondents discussed the importance of long-standing ties among members of the iCCM epistemic community, created by actors' movement across organizations and issue areas, in facilitating policy development:

“[Y]ou have people that have known each other, worked together for 30 years. And you can talk about this stuff and agree on how to move forward ... it certainly made [policy discussions] a lot more fun.” (GLO_2013-07-11, multi-lateral agency)

“[I]t's a small community. ... Information circulated pretty fast. We knew each other. We had collaborated. So I don't remember having had any problem of getting information from them. And I hope they never had any problem in getting information from me. For example, when I worked I used to see [a researcher] at least six times a year, maybe more. And we talk to each other almost weekly.” (GLO_2013-6-27, multi-lateral agency)

While our data does not comprehensively reveal the extent of such ties or how they were clustered within the epistemic community, at least some core members of the iCCM epistemic community appear to have enjoyed substantial familiarity and collegial relations, creating an atmosphere of trust and facilitating collaborative work on iCCM. Our research did not turn up evidence of pre-existing ties hindering progress on iCCM, although a few respondents reported professional disagreements that bordered on personal conflicts, such as in arguments over whether the existing evidence base was sufficient (discussed in greater detail below).

4.4.2 Resolving conflicts within the epistemic community

Epistemic communities are a sub-set of policy networks in which members hold shared 1) values/normative beliefs, 2) causal beliefs, 3) notions of validity, and 4) a common policy enterprise (Haas 1992). Initially, policy actors had points of conflict across all four dimensions (**Figure 5**); indeed they agreed only on broad policy objectives. These conflicts were resolved through structural changes in the network (i.e. including or excluding some members), changes in the state of technology or scientific evidence, shifting funding considerations, and the development of consensus through argument, legitimization and other means.

Values/normative beliefs. While actors agreed on the importance of addressing child survival and the acceptability of task-shifting in general, they held conflicting normative beliefs about the ability of lower-level health workers to safely and effectively administer antibiotics for the treatment of pneumonia. Respondents said some policy actors (located mainly at WHO) were reluctant to accept CCM for pneumonia, voicing concerns about antimicrobial resistance, and indeed WHO lagged behind in advancing the policy even as countries began to implement it (GLO_2013-6-14, academic; GLO_2013-07-23, bilateral agency). At a June 2002 meeting in Stockholm on pneumonia care, researchers presented an updated meta-analysis of pneumonia trials (Sazawal and Black 2003), which respondents described as a “wake-up” moment about the solidity of the evidence for scaling up CCM pneumonia. However, shortly thereafter, an earlier set of CCM guidelines from WHO’s ARI program was removed from the WHO website (GLO_2013-07-11-2, GLO_2013-07-23, bilateral agencies). As one respondent said,

Figure 5 Resolving conflicts within the iCCM epistemic community

	Points of consensus	Points of conflict	Forces of reconciliation	Agreed by iCCM epistemic community members
<i>Values/normative beliefs</i>	<ul style="list-style-type: none"> - More widespread access to curative care for sick children is needed; - Some degree of task shifting is an appropriate response to limited human resources for health. 	<ul style="list-style-type: none"> - Normative disagreement about allowing lower-level health workers to prescribe antibiotics; - Tradeoff between risk of antibiotic resistance and treating sick children now. 	<p>Accruing evidence on safety & efficacy of CCM-pneumonia; Clinicians' resistance overcome via argument? Opponents leave WHO?</p>	<ul style="list-style-type: none"> - High rates of child mortality require a forceful policy response based on scientific evidence; - Community-based workers can safely and effectively prescribe antibiotics.
<i>Causal beliefs</i>	<ul style="list-style-type: none"> - Most child deaths occur outside the health system; - A few common illnesses cause most preventable child deaths, and these including malaria, diarrhea and pneumonia. 	<ul style="list-style-type: none"> - Disagreement about whether pneumonia or malaria was the leading cause of child deaths in Africa. 	<p>RDTs demonstrate prevalence of non-malarial fever in Africa.</p>	<ul style="list-style-type: none"> - Pneumonia causes many more deaths in African children than was previously believed; - Malaria and pneumonia must both be targeted and in an integrated fashion.
<i>Notions of validity</i>	<ul style="list-style-type: none"> - Epidemiological evidence is the best basis for policy; - "Gold Standard" is large-scale experimental designs testing the mortality impact of iCCM. 	<ul style="list-style-type: none"> - Debate on whether sufficient evidence existed to move forward or whether more evidence was needed. 	<p>Argument that action is needed, despite lack of "Gold Standard" evidence.</p>	<ul style="list-style-type: none"> - "Gold Standard" evidence for integrated CCM will not soon be available; - It is acceptable to extrapolate from evidence on single-pathology CCM programs.
<i>Common policy enterprise</i>	<ul style="list-style-type: none"> - Find innovative solutions to advance on the child survival MDG; - Maintain up-to-date strategies & guidelines. 	<ul style="list-style-type: none"> - Sectoral vs. multi-sectoral; - Simple vs. complex interventions; - Integrated vs. separate; - Health promotion vs. preventive vs. curative. 	<p>Complex, multi-sectoral intervention fall out of favor after C-IMCI; Fundraising incentivizes integration; Legitimation of task-shifting for curative care.</p>	<ul style="list-style-type: none"> - Create an integrated community case management strategy to reduce preventable child deaths from malaria, diarrhea and pneumonia.

“Fifteen years ago or even 20 years ago there were research agendas around diarrhea and pneumonia management ... Only some of those pieces of an agenda were actually advanced. ... [W]ith all due respect to our friends in Geneva, it was a process of incremental change.” (GLO_2013-07-23, bilateral agency)

Advocates of allowing CHWs to prescribe antibiotics (who often had positive experiences with CHWs early in their careers) argued that evidence favoring the intervention had “been there for a very long time: community-based trials, not one, two but rather eight, nine trials in the early ‘80s” (GLO_2013-07-22-2, multi-lateral agency). However, the issue was seemingly not over scientific evidence; as one respondent said,

“I think [iCCM] is one of the most evidence driven areas of policy, perhaps with the possible exception of how much more difficult it’s been to push the pneumonia treatment.” (GLO_2013-07-02-3, NGO/private foundation)

Rather, the conflict appears to have stemmed from an over-riding normative belief about the appropriateness of allowing CHWs to prescribe antibiotics. Respondents provided conflicting accounts or were unable to fully articulate the reasons for this normative conflict:

“I don’t know if it’s the pediatric mafia or the medical mafia that doesn’t want to put antibiotics in the hands of a paraprofessional cadre. That’s what you hear.”
(GLO_2013-07-02-2, NGO/private foundation)

“There is something unique about the use of antibiotics in children that creates a certain dynamic ... that makes it distinctly different from many of the other things we work on and ... leads to a more conservative, cautious approach.” (GLO_2013-07-23, bilateral agency)

This “conservative, cautious approach” to modifying or expanding professional norms was most common in “rarified policy circles,” said the same respondent, as opposed to actors with more field experience who had personally observed positive outcomes with CHWs or were perhaps more attuned to the extent of needs on the ground.

The exact way this normative conflict over the appropriateness of CCM for pneumonia was resolved remains somewhat obscure in our data. One respondent said the stalemate was eased when one or two stalwarts against allowing CHWs to prescribe antibiotics (at least pending further research) left WHO around the time the CCM Task Force was gaining momentum (GLO_2013-6-14, academic). In any case, opponents of CCM for pneumonia began to cede ground following the advent of the Global Action Plan on Pneumonia (GAPP) process in 2007 (WHO, UNICEF et al. 2007), as further indicated by a 2008 WHO Bulletin article urging countries to adopt CCM for pneumonia (Marsh, Gilroy et al. 2008), and finally a 2010 World Health Assembly Resolution in favor of the policy (WHA 2010).

Causal beliefs. Actors in the iCCM policy network agreed on the broad outlines of what illnesses caused child deaths and under what conditions but initially held conflicting beliefs about the relative contribution of malaria and pneumonia to overall child mortality in Africa. The received wisdom that malaria was by far the primary etiology of fever was supported by high malaria mortality estimates, though these were derived from epidemiological data based mainly on clinical diagnosis, which is less precise than laboratory tests. Actors with professional experience in Asia, where pneumonia was by the greater problem, suspected the disease also caused many deaths in Africa and separate programs for the two diseases did not make sense, especially given their overlapping clinical presentation. Still, in the early 2000s, global policy-makers moved forward on strategies for community level treatment of malaria

only, notably Home Malaria Management (HMM) (WHO/RBM and WHO/TDR 2004; WHO-TDR 2005), a tactic made possible by the ample availability of funding for malaria programs in the early 2000s. In these years, malaria stakeholders at WHO offices (Global Malaria Programme, Tropical Disease Research Programme, Roll Back Malaria), the Global Fund and PMI/USAID tended to resist calls to integrate CCM for malaria with care for other diseases.

In reality, many cases of pneumonia in Africa were being misclassified as malaria due to the reliance on clinical diagnosis and high degree of symptom overlap (Kallander, Nsungwa-Sabiiti et al. 2004). The widespread introduction of malaria rapid diagnostic tests (RDTs) in the mid-2000s “changed the picture substantially” by providing concrete evidence that many sick children did not have malaria (GLO_2013-06-14, academic):

“The push [toward integrated case management] happened when the RDTs came and the powerful malaria group realized that there’s RDT negative fever. That’s when we got the push.” (GLO-2013-08-15, academic)

The new evidence from RDTs modified the causal beliefs of the malaria (and other) stakeholders, as the greater number of child deaths in Africa was likely caused by pneumonia, not malaria. To further encourage a shift in thinking, non-malaria policy network members used arguments that were at once scientific and affective to convince malaria stakeholders that integrated CCM was a necessity:

“How I wrote it up – and I stand by this – is that those children were being treated for malaria, and they were dying because they didn’t have malaria but they had symptoms that are very similar Malaria programs, if they don’t treat the other

diseases, would be creating really a catastrophe....” (GLO_2013-07-12, bilateral agency)

Following the introduction of RDTs, malaria stakeholders fully adopted this reasoning, incorporating it into later working documents such as a 2010 WHO-TDR PowerPoint presentation which mentions the “obligation to manage patients with negative RDTs” (Pagnoni 2010).

Notions of validity. While there was general consensus among actors on standards of validity used to judge scientific evidence, there was less agreement on the exact amount of evidence judged sufficient for advancing the iCCM policy agenda. The “Gold Standard” of evidence was agreed to be experimental designs that could assess mortality impacts, however, such trials are difficult to realize for practical, financial and ethical reasons. Actors disagreed on the validity of basing policy on existing studies, which mainly included evaluations of CCM for single pathologies and few large trials. Indeed, many respondents said scientific support for iCCM was “weak” (GLO_2013-6-14 and GLO_2013-08-15, academics; GLO_2013-07-22-2, and GLO_2013-07-26, multi-lateral agencies; GLO_2013-07-08-2, bilateral agency). One respondent, when asked whether there was strong evidence for iCCM, said, “No. <Laughter> ... That evidence base is pending” (GLO_2013-07-02-2, NGO/private foundation). The disagreement between actors had to do with pursuing further research versus proceeding with policy development and implementation:

“[Some actors] were just about at each other’s throat[s] ... [some] people were really interested in research only versus the practical and implementation, and that was really one thing that annoyed a lot of [actors].”(GLO-2013-08-13, bilateral agency)

As mentioned before, our data does not fully elucidate how these points of discord were resolved within the epistemic community. One respondent said resolution came following the departure of a few key figures at WHO as previously mentioned, as well as change in personnel at CIDA, where advocates had focused the evidence agenda on mortality impacts (GLO_2013-06-14, academic). In any case, as opposition faded, a prevailing view would emerge in the epistemic community:

“[The 2012 Joint Statement on iCCM] summarizes the disease-specific efficacy and effectiveness trials, and that seemed enough to justify rolling it out. Yes, it’s not the same when you combine all three [diseases] ... but, you know, public health is the art of incomplete information.” (GLO_2013-07-02-2, NGO/private foundation)

“There was a leap of faith in terms of bringing the three conditions together.”
(GLO_2013-07-08-2, bilateral agency)

In the meantime, policy actors continued to engage in evidence building, through for example the Operational Research working group of the CCM Task Force and resulting outputs such as the 2012 American Journal of Tropical Medicine and Hygiene supplement (Young, Wolfheim et al. 2012).

Common policy enterprise. As the aforementioned conflicts were resolved, actors in the iCCM network were positioned to embark upon a common policy enterprise, with the ultimate goal of making progress toward the child survival MDG. As with any global health policy, epistemic community members were faced with a set of choices: whether the intervention would focus on the health sector or be multi-sectoral, whether an integrated approach to pathologies was merited, how simple or complex it would be, and where along the spectrum of care (health promotion, prevention, curative) the emphasis would be placed.

Multi-sectoral approaches had fallen out of favor after C-IMCI failed to launch (discussed further below), disfavoring the addition of activities related to poverty, agriculture and gender (GLO_2013-07-23, bilateral agency). Furthermore, the question of separate versus integrated care for pathologies was resolved once malaria stakeholders accepted the implications of RDT-negative fever, a move embraced by other actors for clinical reasons and thanks to the promise of funding from the malaria side. Malaria programs had been prime beneficiaries of a wave of vertical funding in the early 2000s, and other policy actors were eying malaria's coffers:

“[Malaria] brought a lot of resources, both from PMI and also from Global Fund. We basically decided that this was the star we needed to hitch to if we wanted to make iCCM go forward. So we groveled a little bit.” (GLO_2013-07-11-2, bilateral agency)

Malaria stakeholders may have had their own incentives to make the strategic alliance following higher prices for the new artemisinin combination therapies compared to previous treatment regimes in the mid-2000s.

Next, given the approaching deadline for the MDGs, members of the epistemic community focused on a simple, targeted approach to treating the three main pathologies that could be quickly implemented at scale. And though actors agreed malnutrition was a common underlying cause of a substantial portion of child deaths, the interventions involved in caring for children with severe or moderate acute malnutrition were complex in their own right, and in many cases not suitable to be undertaken by CHWs with limited training (GLO_2013-07-11-2, bilateral agency). For these reasons, epistemic community members

were inclined to exclude malnutrition from the iCCM policy enterprise, in the meantime creating space to resolve other disagreements. As one respondent said,

“There’s full recognition of the nutrition element of this, but also a concern that it might weigh down efforts to resolve disagreements over pneumonia.” (GLO_2013-07-23, bilateral agency)

Lastly, along the continuum of care, actors in the iCCM policy network were led to focus on curative care based on the objective of making rapid progress toward the approaching deadline for the MDGs (Druetz, Ridde et al. 2014). And though significantly expanding curative care has far-reaching implications for countries’ health infrastructure and human resources, policy communities working on health systems remained separate from members of the iCCM epistemic community (GLO_2013-06-14, GLO_2013-08-15, academics), though some were performing highly relevant work regarding CHWs’ role in expanding access to child survival interventions (Haines, Sanders et al. 2007). It is conceivable that the broader legitimization of task-shifting taking place in health systems policy communities may have seeped into the iCCM epistemic community, allaying concerns about using CHWs to provide curative services. Our data do not permit us to verify this conjecture; however, these communities have subsequently been in more visible contact. For example, the Global Health Workforce Alliance (GHWA) funded recommendations on implementing iCCM and other community based interventions in conflict situations, as investigators involved in iCCM overlapped with GHWA (GHWA, UNCHR et al. 2011).

4.4.3 How the iCCM epistemic community influenced policy development

Once constituted, the iCCM epistemic community was poised to influence policy, and did so via the three causal dynamics outlined by Haas: 1) by relieving decision-makers’ uncertainty

about complex issues; 2) by interpreting data and observations; and 3) by institutionalizing preferred policy solutions.

4.4.3.1 The epistemic community gains power by reducing uncertainty

Policymakers seeking to address ongoing high rates of child mortality were in a difficult place in the early to mid 2000s. C-IMCI, which aimed to reach children at community level, was vague on implementation details and not include curative care. By the time the 2001 Baltimore conference on C-IMCI provided a clearer path to implementation (BASICS, CORE_Group et al. 2001), the policy was “already dead,” partially due to limited support at Unicef, which had been assigned responsibility for supporting the policy (GLO-2013-07-08-2, bilateral agency). In 2003, health policy-makers at global and national levels were both dismayed and re-energized by a Lancet series highlighting ongoing high rates of child mortality worldwide and particularly in Africa (GLO_2013-6-14 and GLO_2013-6-20-2, academics; GLO_2013-6-20 and GLO_2013-7-31, multi-lateral agencies; GLO_2013-7-2-2 and GLO_2013-7-10, NGO/private foundation). The series made clear that fast action was needed and that previous policies had had disappointing results. Evaluations of IMCI were also showing smaller than expected reductions in child mortality rates, mainly because children failed to reach facilities where IMCI was available (WHO, UNICEF et al. 2003; Bryce, Victora et al. 2005). Similarly, UNICEF’s Accelerated Child Survival and Development (ACSD) program, implemented in 11 west African countries between 2001 and 2005, failed to substantially reduce mortality relative to comparison areas, in part because coverage of malaria and pneumonia treatment at community level was not sufficiently realized (Bryce, Gilroy et al. 2010).

As lessons from these programs accrued, national policy-makers understood that greater access to curative care was needed for children sick with a few specific illnesses; however, uncertainty remained around operational specifics regarding the CHW cadre. In this context, ongoing work by members of the iCCM epistemic community offered fairly specific guidelines and best practices for programs using CHWs, building on substantial groundwork by implementing partners who had reviewed their respective field experiences in forums such as the CORE Group. Indeed, implementation of iCCM-like policies in sub-Saharan African countries occurred preceding and throughout policy development. USAID's BASICS program began implementing CCM-like strategies in the late 1990s through 2009, and facilitated three large African regional meetings on CCM with international agencies (Dakar 2005, DRC 2007, and Madagascar 2008). ICCM-like strategies were further implemented in other countries after 2007, when the Canadian International Development Agency (CIDA) signed a C\$ 100 million agreement with Unicef called the Catalytic Initiative, with additional funding by the Gates Foundation. By the time global iCCM policy was issued in 2012, large-scale iCCM-like programs and implementation research funded by the Gates Foundation were underway in more than a half dozen countries in sub-Saharan Africa. This supported an increasingly precise conception of operational specifics, reducing uncertainty while at the same time offering initial proof of iCCM's feasibility.

4.4.3.2 Interpretation of evidence matches problem and solution

In the case of iCCM, those responsible for designing policy were nearly all members of the epistemic community and vice versa. As a result, epistemic community members were not interpreting evidence for a separate body of policymakers. As part of their analysis, epistemic community members used advanced modeling tools such as LiST (Lives Saved Tool), which estimates potential mortality impacts due to increases in coverage of specific

health interventions. These analyses linked iCCM as a solution to the problem of child mortality in a convincingly “scientific” and data-driven way that measured the number of potential “lives saved” (GLO_2013-06-20-2, academic; GLO_2013-07-02, multi-lateral agency, GLO_2013-07-11-2, bilateral agency; GLO_2013-07-11-3, NGO/private foundation). One respondent said,

“We’ve known for 30 years that kids are dying in the community of diarrhea and malaria. I mean, that’s really old ... Quantifying the causes and risk factors, I think, was an important thing, and the more specific burden ... It had a lot to do with the packaging of that information.” (GLO_2013-07-11-3, NGO/private foundation)

Members of the epistemic community also relied on data that suggested iCCM as a solution via the Countdown Group’s country profiles (also known as “dashboards”), which charted coverage of key child survival interventions (Bryce, Telleri et al. 2006). These dashboards seemed to imply an iCCM-like approach:

“If you look at the indicators, the dashboard ... if you read that carefully ... with the thought of what do you do, what pops out of them is community case management, at least the way I see it.” (GLO_2013-07-11-3, NGO/private foundation)

The emphasis on complex algorithms and highly technical interpretations is no doubt linked to the backgrounds of members of the epistemic community, a substantial portion of whom were medical doctors or held advanced degrees in epidemiology, public health, and related fields. This disciplinary homogeneity permitted high-level discussions of the policy’s clinical content and projected epidemiological impact. However, despite the substantial field and implementation work described above, there may not have been equal consideration of broader practical concerns related to scaling up iCCM, such as the health systems

implications of creating or rehabilitating cadres of health workers and the resulting financial burden for countries. (For a synthesis of this point based on six country case studies of iCCM, see George et al., this issue).

4.4.3.3 Institutionalization secures an imprimatur and resources

Actors working on iCCM were quite often members of powerful institutions in global health; however, the policy initially lacked 1) the imprimatur of the main norm-setting body (WHO), 2) support from the main international agency with jurisdiction over the issue area (Unicef) and 3) sufficient resources to pursue policy development. First, gaining the imprimatur of the main norm-setting body in global health, WHO, was critical, particularly for the controversial pneumonia component, as countries were unlikely to move forward on a policy they felt the world's experts did not condone in terms of safety and efficacy. In its role as the global norm-setting body, WHO had a necessarily cautious approach made more stringent in 2003 by new rules on the use of evidence in policy development (Oxman, Lavis et al. 2007). Despite WHO's release of a Joint Statement on pneumonia that supported community treatment in early 2004 (WHO/UNICEF 2004), further policy endorsement lagged at the agency. While the mechanisms of how WHO changed its position and began to support CCM for pneumonia are not fully elucidated by our data, by 2010 the policy can be said to have received WHO's full imprimatur in the form a WHA resolution (WHA 2010).

Second, even with the legitimacy conferred by WHO's approval, the iCCM policy endeavor could not succeed without what Haas calls the "consolidat[ion] of bureaucratic power," including support from the main international agency with jurisdiction over the issue area (Haas 1992). Here, an important boost was provided by the revival of the child survival agenda at Unicef after a change in leadership in 2005 (GLO_2013-07-08, academic;

GLO_2013-07-02-3, NGO/private foundation). This followed a period during which Unicef had followed a “human rights approach” that put less emphasis on reducing child mortality compared to other priorities, spurring criticism of the agency for abdicating its leadership role on child survival (Horton 2004). After 2005, child survival once again became a top priority at Unicef, and Unicef officials would be key partners in the CCM Task Force and throughout policy formulation.

The last component of successful institutionalization was the allocation of sufficient resources to pursue policy development in early 2010, when higher-level officials at Unicef and USAID agreed “CCM [was] an important priority for both agencies,” and followed up with specific institutional commitments such as assigning USAID’s MCHIP program as the Task Force’s secretariat (GLO_2013-07-11-4, bilateral agency). At the same time, the financial prospects for implementation were looking rosier due to the malaria community’s involvement in the policy. These partnerships enhanced the policy’s seeming viability as institutional partners began to understand that collaboration would result in a bigger pot to draw from:

“Big global health siloed programs ... [began] to cast this as a win-win rather than a Peter robbing Paul scenario, and that was ... really important [in] providing a conducive environment for a mission such as iCCM.” (GLO-2013-07-31, multi-lateral agency)

4.5 Discussion

ICCM was created by a community of international technocrats spanning different agencies, continents, and issue areas, who lent their focused attention to the problem of child mortality. Members of the epistemic community were mainly technical health professionals

with higher-level degrees in medicine, public health, epidemiology and similar fields. Professional relationships in this group went back several decades as actors moved between agencies and topic areas, forming connections via “institutional junctions” such as research departments, conferences and meetings, and coordinating mechanisms (Stone 2004). The epistemic community around iCCM evolved as members resolved outstanding conflicts on values/normative beliefs (about the ability of CHWs to safely prescribe antibiotics), causal beliefs (malaria versus pneumonia as the leading cause of child deaths in Africa), notions of validity (whether the evidence basis was sufficient to move forward on policy) and a common policy enterprise (including questions of intervention complexity, integration, etc.). These conflicts were resolved via structural changes in the network (the departure of key opponents, the decision to exclude malnutrition), negotiation (potential public health benefits overriding uncertainties about the evidence base), new technology and evidence (spurred by the advent of RDTs), and the existence of funding incentives (favoring integration of malaria). Once constituted via the CCM Task Force after 2008, the epistemic community influenced policy content by answering uncertainties about technical details and offering operational guidance, interpreting complex evidence in a way that framed iCCM as the ideal solution, and securing support and resources from the most powerful institutions in global public health.

One interesting feature of the iCCM epistemic community was the near total overlap between its membership and the set of policy actors assigned responsibility for creating the policy, whereas epistemic communities are usually conceptualized as one set of actors among others who influence policy decision makers. As the epistemic communities framework has not frequently been applied to global health policy, it is difficult to assess how unusual or unique this situation may be. However, there was no such overlap of the epistemic

community in a study of WHO's 2005 adoption of the Framework Convention on Tobacco Control, which documents how a group of health researchers and scientists prevailed over opposing trade and industry representatives (Mukherjee and Ekanayake 2009). In another case in Bangladesh, members of a policy community working on neonatal mortality revitalized a dormant policy sphere, with its members invited into the policy-making process by the Ministry of Health (Shiffman and Sultana 2013). Further application of the epistemic communities framework for global health policy is required to assess how much overlap tends to occur between technocrats and policymakers and whether such overlap is a positive feature for policy development.

Our case study of the iCCM epistemic community offers insights into understanding how global health policies are formed and how policy-making processes affect policy content, for example when issue-area experts decide not just technical details but the broad shape of policy. In this respect, our case study mirrors findings from a study on the use of evidence in WHO recommendations, which showed a heavy reliance on experts in a particular specialty, rather than on experts from relevant methodological areas or representatives of groups who would subsequently live with the recommendations (Oxman, Lavis et al. 2007). The finding recalls criticisms of Haas' epistemic communities framework from within Science and Technology Studies holding that so-called "expertise," including notions of validity, causal beliefs and so on, is socially constructed. Thus, the shared perception of problems in epistemic communities may have less to do with problems' essential "technical" nature than with the epistemic communities' disciplinary orientations, political ideologies or discursive framing (Jasanoff 1996; George 2004). In our case study, consensus was indeed achieved at times by excluding certain actors and setting issue-area boundaries, the better to

build on homogenous worldviews, dynamics that are elucidated but perhaps not fully problematized under the epistemic communities framework.

The epistemic communities framework offered many insights; however, our data did not allow us to fully explain the controversy over allowing CHWs to administer antibiotics. By the early to mid-2000s, numerous high-quality studies and two meta-analyses ought to have satisfied policy actors' own standards of scientific validity about the safety and efficacy of CCM for pneumonia (Sazawal and Black 1992; Sazawal and Black 2003). The articulated reason for some actors' continued opposition was the fear of antimicrobial resistance, a serious consideration as it could lead to many common conditions becoming untreatable (Review_on_Antimicrobial_Resistance 2014). However, unarticulated rationales are also worth considering. One reason for the widespread popularity of Western medicines is because they are associated with authoritative professionals and represent the medical realm; "in them, healing is objectified" (van der Geest and Whyte 1989). Such potent symbolic associations could explain the unspoken and perhaps unconscious proprietary feelings over antibiotics within the culture of clinically-trained policy actors ("the medical mafia"), who simultaneously articulated justifiable worries about the dangers of anti-microbial resistance. Finally, while the agencies involved in developing iCCM often had strong relationships with country offices (particularly at Unicef and USAID), the policy was forged by an epistemic community operating at the global level. In other studies of global policies adopted by African countries, analysts observed a looped process by which treatment protocols were experimented with at the country level, "confirmed" at the global level and then filtered back down to countries (Ogden, Walt et al. 2003; Walt, Lush et al. 2004). In Mozambique, country-level actors were observed to be more receptive to tuberculosis treatment guidelines

because they had already been involved in pilots (Cliff, Walt et al. 2004). This type of back and forth between global and national policy-makers was not characteristic of iCCM and country case studies in this series suggest a disconnect between global policy-makers' goals and the health systems implications and service delivery needs that national policy-makers would subsequently have to address [Juma et al, this issue; Chilundo et al, this issue]. Similarly, a quantitative study of iCCM policy makers found divergences in research priorities between experts working in organizations headquartered in high-income countries, who prioritized technical questions on diagnostic and treatment algorithms, and those working in-country or regionally, who preferred research on CHW retention, motivation and supervision; determinants of non-use of iCCM by caretakers; and other operational concerns (Wazny, Sadruddin et al. 2014). Thus, while global iCCM policy makers were highly efficient at sharing complex, detailed, high-level scientific information and data among themselves, as the epistemic communities framework demonstrates, this may also explain members' observed detachment with issues of high priority for field workers, operational actors and others who subsequently have to implement the strategy.

4.6 Conclusion

In this case study, we analyzed a network of actors involved in developing global child health policy during the late 1990s and 2000s and how they formed an epistemic community framing iCCM as a solution to the problem of child mortality. Our study underlines the importance of technocratic expertise in the relatively uncontested arena of child health and illustrates the relevance of the epistemic community framework for understanding global health policies. Further applications of the epistemic communities framework to health policies could help shed light on how these policies are formed and how policy-making processes affect policy content.

Chapter 5. Power and pro-poor policies: the case of iCCM in Niger

5.1 Abstract

Analyses of health policy in low- and middle-income countries frequently mention but rarely explore power dynamics, whether or not the policy in question targets the poor. We present a case study in Niger of integrated Community Case Management (iCCM), a policy to provide basic care for poor rural children sick with malaria, diarrhea and pneumonia that has contributed to measurable reductions in child mortality. We focus on three dimensions of power in policy making: political authority, financial resources, and technical expertise. Data collection took place March to August 2012 and included semi-structured interviews with policy actors (N=32), a document review (N=103) and contextual analysis. Preliminary data analysis relied on process tracing methodology to examine why iCCM was prioritized and identify dimensions of power most relevant to the Nigerien case; we then applied theoretical categories of these power dimensions deductively to our data. We find that political authorities, namely President Mamadou Tandja, created the underlying health infrastructure for the policy (“health huts”) as a way to distribute rents from development aid through client networks while claiming the mantle of political legitimacy. Conditional influxes of financial resources created an incentive to declare fee exemptions for children under 5, a key condition for the policy’s success. Technical expertise was concentrated among international actors from multi-lateral and bilateral agencies who packaged and delivered scientific arguments in support of iCCM to Nigerien policymakers, whose input was limited mainly to operational decisions. The Nigerien case sheds light on the dimensions of power in health policy-making, particularly in neo-patrimonial African regimes, and provides insights on how external actors can work within these contexts to promote pro-poor policies.

5.2 Introduction

Despite widespread declines in child mortality rates in recent years, an estimated 6.3 million children under 5 still die each year, many from preventable, treatable diseases including pneumonia (15% of deaths), diarrhea (9%), and malaria (7%) (You, Hug et al. 2014).

Integrated community case management of childhood illness (iCCM) is an evidence-based strategy to provide life-saving curative care for these diseases to children in low- and middle-income countries (LMICs), using health workers at the community level (Young, Wolfheim et al. 2012). While not explicitly marketed as a “pro-poor” policy, iCCM primarily benefits poor rural populations, with few direct benefits to segments that already have access to the health system. The World Health Organization (WHO) and Unicef promoted iCCM in a 2012 Joint Statement (WHO/UNICEF 2012); powerful bilateral agencies and civil society actors such as USAID, the Canadian International Development Agency (CIDA, now DFATD), Save the Children and the Gates Foundation have also supported its development and implementation. Nonetheless, a survey of Unicef country offices in sub-Saharan Africa found that while many countries had adopted policies supportive of community-level treatment of childhood illnesses, fewer had implemented integrated approaches to CCM at any scale (George, Young et al. 2012).

In recent years, scholars of health policy in LMICs have observed that power dynamics can be decisive in policy outcomes, for example via the exercise of political power in priority-setting processes and policy reform (Reich 1995; Shiffman and Garcés del Valle 2006; Shiffman and Smith 2007) and the ability of front-line health workers to limit or re-shape the implementation of decisions taken at higher levels (Lipsky 1980; Erasmus and Gilson 2008; Lehmann and Gilson 2012). Nonetheless, the concept of power is often evoked without a specific theoretical exploration of what is meant by the term (Gilson and Raphaely 2008;

Buse, Dickinson et al. 2009). A better understanding of the concept of power is necessary to understand how LMICs adopt and implement health policies, particularly those targeting poorer populations that are more likely to be powerless.

In this paper, we provide an analysis of power in the policy process using a case study of iCCM development and implementation at the central government level in Niger. Access to healthcare for Niger's poor, rural populations has historically been extremely limited; the country's health system has been described as one of "urban privilege" (Raynaud 1987; Körling 2011). Nonetheless, in 2007, Niger became one of the first countries in sub-Saharan Africa to adopt iCCM and it remains one of the few where it has been implemented at a national scale. Furthermore, effective implementation of iCCM and surrounding policies was found to contribute nearly a quarter of Niger's 43% reduction in child mortality between 1998 and 2009 in a study using the Lives Saved Tool (LiST) to calculate the impact of interventions on child mortality (Amouzou, Habi et al. 2012).

To understand power in Niger's iCCM policy development process, we first examine theories of power and select three dimensions of the concept based on preliminary analysis of case study data. Next we describe data collection methods and apply an analytical framework for understanding power in the Nigerien case. Finally, we discuss findings and the case's significance for understanding how pro-poor health policies can be promoted in countries with similar political and economic contexts.

5.3 Background

The concept of power remains elusive both conceptually and empirically (Hyden 2008). Foucault called power the "most hidden" part of human relations and the very concept may be "essentially contested," meaning the subjective assumptions needed to analyze it are

inherently value-dependent (Gallie 1955-6; Foucault 1994). Stephen Lukes suggests the term itself is “polysemic” and can be defined to include or exclude a range of phenomena such as authority, influence, coercion, force, manipulation, and domination (Lukes 2004). And while many analyses of power cite Robert Dahl’s classic definition, “A has power over B to the extent that he can get B to do something that B would not otherwise do,” others argue this formulation captures only overt, compulsory forms of power, ignoring more subtle phenomena such as those encompassed by Bertrand Russell’s power of “propaganda or habit” or Gramscian “hegemonic ideas” operating unnoticed in the background (Russell 1938; Dahl 1961; Gramsci 2012).

Power is a fundamental if enduringly mysterious force in health policy as in all human endeavors and in recent years scholars have called for empirical studies of power in health policy to advance understanding and ultimately “tackle the global political determinants of health” (Buse, Dickinson et al. 2009; Marten, Hanefeld et al. 2014). We started from a largely agnostic position on the dimensions of power most relevant to health policy making processes, considering theories encompassing both the sources of power (e.g. in personal charisma, procedural reason, physical force) and the mechanisms by which it is exercised in society (Russell 1938; Weber 1948; Giddens 1984; Foucault 2002; Lukes 2004). Given the theoretical cornucopia at our disposal – and early stage of the health policy literature in tackling this topic – we decided to focus on dimensions of power most relevant to the Nigerien case, as revealed by preliminary data analysis. Three dimensions of power emerged as most salient and are discussed here in greater detail: 1) political authority, 2) financial resources and 3) technical expertise.

The first dimension of power, political authority, can influence policy development processes in both direct and indirect ways. Possessors of political authority can directly advance or hinder specific health policies by drawing attention to issues, controlling financial resources and regulatory regimes, and selecting health policy actors and applying pressure on them (Shiffman and Garcés del Valle 2006; Croke 2012); furthermore, political cycles and incentives can be exploited by policy-makers to improve the chances of policy reforms (Reich 1995). Forms of political authority can also have indirect impacts on policy making, for example by creating institutional incentives and constraints or setting up tradeoffs with competing priorities. Such incentives and constraints are important insofar as they affect the choices made by those in possession of power, as power is “a dispositional concept, comprising a conjunction of conditional or hypothetical statements specifying what would occur under a range of circumstances *if and when* the power is exercised” (emphasis added) (Lukes 2004). This ability to act or not act in favor of a policy (or anything else) is what Bachrach and Baratz call the “two faces of power” (Bachrach and Baratz 1970). It is also important to consider less overt sources of power related to political authority, such as political legitimacy, which can provide leeway to actors possessing it or whose promise can motivate policy decision making.

The second dimension of power, financial resources, is in some ways the simplest: funding is the *sine qua non* of the policy enterprise, especially at the level of implementation. Beyond the mere availability of financial resources for the policy in question, however, it is relevant to consider who possesses or controls these financial resources, as these actors have inherently greater advantages in the political (and policy) arenas (Wright Mills 1968; Buse, Mays et al. 2009). Financial resources are thus inseparably linked to the power of political authority, in that revenue flows (stemming from sources both internal and external to the

state) bestow power on actors, who choose to expend funds among various policy options. Actors may also support the spread of policies through the “manipulation of economic costs and benefits” of choices, as has been observed in the international policy diffusion literature (Dobbin, Simmons et al. 2007).

Third, technical expertise is intrinsic to government action in the modern era, and control over knowledge and information is a crucial dimension of power in policy making (Haas 1992; Rose and Miller 1992). Technical capacity to produce, interpret and disseminate knowledge and information is differentially distributed among actors within the policy sphere, particularly in LMICs, where powerful international actors often proliferate (Pallas, Nonvignon et al. 2015). Actors’ technical education and training not only conditions the epistemic and normative frameworks guiding their practice, but also confers power in and of itself: in global health, Shiffman finds that holders of expertise claim authority based on a privileged relationship to the truth and a superior procedural way of moving towards the ideal policy outcome (Shiffman 2014). At lower levels, actors can also exercise technical power via regulatory and operational decision making (Lipsky 1980; Erasmus and Gilson 2008; Lehmann and Gilson 2012). Finally, since Foucault, we understand knowledge itself to be the product of power relations in the society that created it, meaning the way problems are presented and the scientific or technical arguments used to support policy positions must be reflected upon critically (Foucault 1994).

Nigerien context

Since independence in 1960, Niger has experienced alternating periods of autocratic rule and democratic governance, punctuated in the past two decades by *coups d’état* in 1996, 1999 and 2010. Political authority in Niger conforms to classic models of neo-patrimonial governance

in Africa, characterized by a strong executive branch, reciprocal clientelism and extensive patronage systems (Bratton and van de Walle 1994; Therkilsden 2005; Bach 2012). Power in such regimes “is concentrated and personalized, entailing discretionary control over broad realms of public life” (Lewis 1996). In countries with multi-party electoral systems, as in Niger, large partisan operations are marshaled in the service of reciprocal clientelism (Olivier de Sardan 2004; Tidjani Alou 2012). When public finances and government services are weak, as in Niger, rulers are further incentivized to cultivate electoral support via patronage instead of promises of future programming, as voters view skeptically the government’s ability to deliver on said promises (Kaufman, Kraay et al. 2008; Kelsall 2011).

Neo-patrimonial political authority is predicated on rent sharing (via patronage); however, Nigerien authorities have historically had limited access to financial resources and few revenue-generating capabilities. Niger’s tax-to-GDP ratio is well below the West African Economic and Monetary Union target of 17% and the extractive sector, a main source of government revenue, suffers from insufficient profit monitoring and diversion of funds (AFD 2011). The resulting chronic fiscal weakness and recurrent deficits have been mitigated by large aid flows; as a result, government policy-makers in all sectors are heavily dependent on aid to finance basic programming. **Table 5** shows Niger’s main sources of revenue from 2005 to 2007, the only years for which tax revenue data is available (these years also coincide with the period during which iCCM policy was tested and adopted). These figures demonstrate Niger’s advanced level of aid dependence, particularly as Goldsmith has suggested countries with overseas development aid (ODA) greater than 10% of gross national product are likely to have “questionable sovereignty in key policy areas” (Goldsmith 2001).

Table 5 Nigerien government revenue during iCCM policy development (2005-2007)

	2005	2006	2007
Gross National Income (GNI) (thousands of US\$)	3,396,604	3,645,126	4,290,093
Tax revenue (thousands of US\$)	323,295	363,813	415,957
Tax revenue (% of GNI)	9.5	10.0	9.7
Net official development assistance (ODA) (thousands of US\$)	604,460	611,060	565,150
Net ODA (% of GNI)	15.4	14.9	12.7
External resources for health (% total expenditure on health)	34.9	32.8	31.6

Source: Based on World Bank data

Compared to other LMICs, Niger has limited technical capacities in health policy making, with a small tertiary education system drawing from a population with a low literacy rate (29%) (UNESCO 2012). While the uranium boom in the 1970s financed the creation of a relatively strong public administration, structural adjustment policies in the 1980s and 90s caused a major degradation in institutional planning capacities. At the same time, there was attrition of the technocratic class, whose brightest members were lured by significant salary differentials at aid organizations. The result was prolonged technocratic atrophy in the government sector, whose effects are apparent today in the degraded planning capacity of state agencies (Lavigne Delville and Abdelkader 2010). Currently, international organizations continue to employ large numbers of Nigerien and international technical staff, with human and material resources that often dwarf their government counterparts; the Unicef campus in Niamey alone counts over 55 technical experts (including 25 local and 30 international staff), not including consultants hired on a temporary basis (Touré personal_communication).

5.4 Methods

Case study methodology is useful for reconstructing phenomena holistically to reveal underlying processes (Yin 1994). We used a document review, semi-structured interviews and contextual analysis to document the iCCM policy process in Niger and analyze how three dimensions of power – political authority, financial resources and technical expertise – contributed to policy outcomes.

Primary data collection took place February to August 2012 and included 1) an extensive document review and 2) interviews with Nigerien and international officials involved in formulating iCCM (**Table 6**). For the document review (N=103), we combined close reading of documents on iCCM from sources such as government ministries, international organizations and public sources, with systematic data extraction across such categories as the document's type/purpose, authorship, justifications put forward, budgetary data (when available) and scientific or technical argumentation. In-depth semi-structured interviews (N=32, n= 28 in country) were conducted with individuals involved with the iCCM policy process and identified through the document review and snowball sampling. Interviews were conducted in French and transcribed in-country. We complemented these data sources with secondary analyses of Nigerien political economy, political history and quantitative economic indicators.

Table 6 Primary data collection

Document review		
	<i>N</i>	<i>Examples</i>
<i>Official policy</i>	22	<ul style="list-style-type: none"> - National strategies for child survival, family health practices, malaria control - Policy declarations or directives in the area of health - Human or health sector development strategies (Health Development Plan, Poverty Reduction Strategy...) - Training manuals for health workers
<i>“Gray” literature</i>	29	<ul style="list-style-type: none"> - Preliminary or draft versions of health policies - Internal documents (meeting minutes, PowerPoint presentations from workshops, supervision reports...) - Project proposals/ funding requests for donors - Reviews of IMCI in Niger and region (WHO, WAHO, UNICEF ...)
<i>Scientific data / evidence</i>	31	<ul style="list-style-type: none"> - Articles in international journals on health programs or policies in Niger - Doctoral students' dissertations in health / public health - Surveys from Nigerien statistics agency or external organizations - Socio-anthropological research on the Nigerien context - Action research studies (for example on family health practices)
<i>Other</i>	21	<ul style="list-style-type: none"> - Laws and regulations - Cooperation agreements between Nigerien government and external actors - Articles published in Nigerien newspapers, other newsletters or publications - Historical documents on the implementation of IMCI
<i>TOTAL</i>	103	
Semi-structured interviews		
	<i>N</i>	<i>Examples</i>
<i>Government sector</i>	19	<ul style="list-style-type: none"> - Senior and mid-level Ministry officials in departments of reproductive and child health, community health, health education, nutrition, etc. - Officials at regional health offices and the national malaria program (PNLP) - Clinicians at national reference hospitals and maternities & IMCI trainers - Ministry of Communication (community radios program)
<i>Donors & technical assistance</i>	10	<ul style="list-style-type: none"> - WHO-Niger program officers (child/reproductive health) - Unicef-Niger program officers on child survival, health communications, etc. - USAID staff working on BASICS, BASICS II and AWARE-RH programs - International consultants hired for research, training, report writing, etc.
<i>NGOs & civil society</i>	3	<ul style="list-style-type: none"> - Country staff at international & local development NGOs - Members/leaders of health worker professional associations
<i>TOTAL</i>	32	

For preliminary data analysis, we used process tracing to combine multiple sources of information establish causality, reveal political and social processes and minimize bias when describing events and processes in the policy cycle (Yin 1994; Shiffman, Stanton et al. 2004).

As such, we compiled a timeline of iCCM policy development using information gleaned from interviews, the document review and secondary analyses of the Nigerien political context. Interviews were coded on categories related to the policy actors, processes and content; political and financing issues; technical expertise and scientific argumentation; and mentions of power using NVivo 9 (QSR 2010). We then interrogated our data using questions and theoretical categories drawn from the literature on power discussed above, focusing on the dimensions of power that emerged as most relevant during preliminary data analysis (**Table 7**). Our analytical strategy was thus both inductive (selecting dimensions of power to focus on based on preliminary analysis) and deductive (applying theoretical concepts drawn from the political economy and health policy literatures to the data).

This research was approved by Niger's national ethics committee (*Comité consultative national d'éthique*) and Ministry of Higher Education and Scientific Research; it was deemed exempt from ethical review as part of a multi-country study of iCCM policy formulation in Africa by the Johns Hopkins Bloomberg School of Public Health.

Study limitations

This study has some limitations. Not all targeted stakeholders, particularly high officials within the Ministry of Health (MOH), were able to be interviewed and some key documents were unavailable due to the destruction of WHO-Niger servers by fire in 2007; budgetary data were difficult to obtain. As in any qualitative study, respondents may have sought to portray events strategically; we triangulated between respondents and other data sources to understand how a respondent's position might affect his or her words, remaining vigilant for the "double-speak" characteristic of West African bureaucracies (Olivier de Sardan 2004).

Table 7 Framework on power for a policy analysis of iCCM in Niger

	Concept	Questions to guide inquiry & analysis
Political authority	<i>Systems of governance</i>	<ul style="list-style-type: none"> - Which persons or groups hold decision-making power? What rules condition its use? - By what mechanisms is political authority exercised? Is the political system presidential, parliamentary, authoritarian, etc.? - What forms of political participation exist and are effective? - What interests & factions exist within the state?
	<i>Institutional incentives & constraints</i>	<ul style="list-style-type: none"> - What demands (financial are otherwise) are put on political authorities? What are the institutional limits of political authority? - What incentives do political authorities have to align themselves with segments of the population? What disincentives? - What accountability mechanisms exist and are enforceable? - Is power in the political regime viewed as legitimate? What is the basis of this legitimacy (electoral, redistributive, rhetorical, etc.)?
	<i>State capacity/ weakness</i>	<ul style="list-style-type: none"> - To what extent are official channels of authority respected or challenged? Does the state control what happens within its borders? - In which areas is state capacity most limited?
Financial resources	<i>State sources of revenue</i>	<ul style="list-style-type: none"> - What are the main sources of state revenue and in what proportion? <ul style="list-style-type: none"> o Internal sources: tax base, extractive or other sectors, etc. o External sources: trade flows, aid intensity and/or dependence
	<i>Loci of control over resources</i>	<ul style="list-style-type: none"> - Which actors or groups control financial resources? In what other spheres do they have leverage? - Which actors have the ability to manipulate the economic costs and benefits of policy decisions?
	<i>Availability of resources for the policy</i>	<ul style="list-style-type: none"> - Which resources could potentially be used for the policy in question? How liquid and/or fungible are they? - What other priorities compete for the same resources? - What trade-offs come with accessing available financial resources?
Technical expertise	<i>Technical capacity</i>	<ul style="list-style-type: none"> - Which actors or groups are best equipped to produce, interpret and disseminate technical knowledge? Which are less well equipped? - What is the relative level of capacity of state and non-state actors? - Who are the main sources of knowledge and how is knowledge transmitted within and between policy circles? - What potential biases might stem from technical education/training, disciplinary backgrounds, etc.?
	<i>Decision-making autonomy</i>	<ul style="list-style-type: none"> - What is the role of technical staff in health policy decision-making? - What is the relationship between health policy actors and holders of political authority? - What operational & regulatory levers & constraints exist and who is affected by them?
	<i>Nature of technical knowledge</i>	<ul style="list-style-type: none"> - What are the origins of the frameworks, norms and ideas that shape technical inquiry? - How are issues framed? What is the stated problem to be addressed? What arguments are used during discussions? - What are recent trends in prioritization and technical content in the policy area?

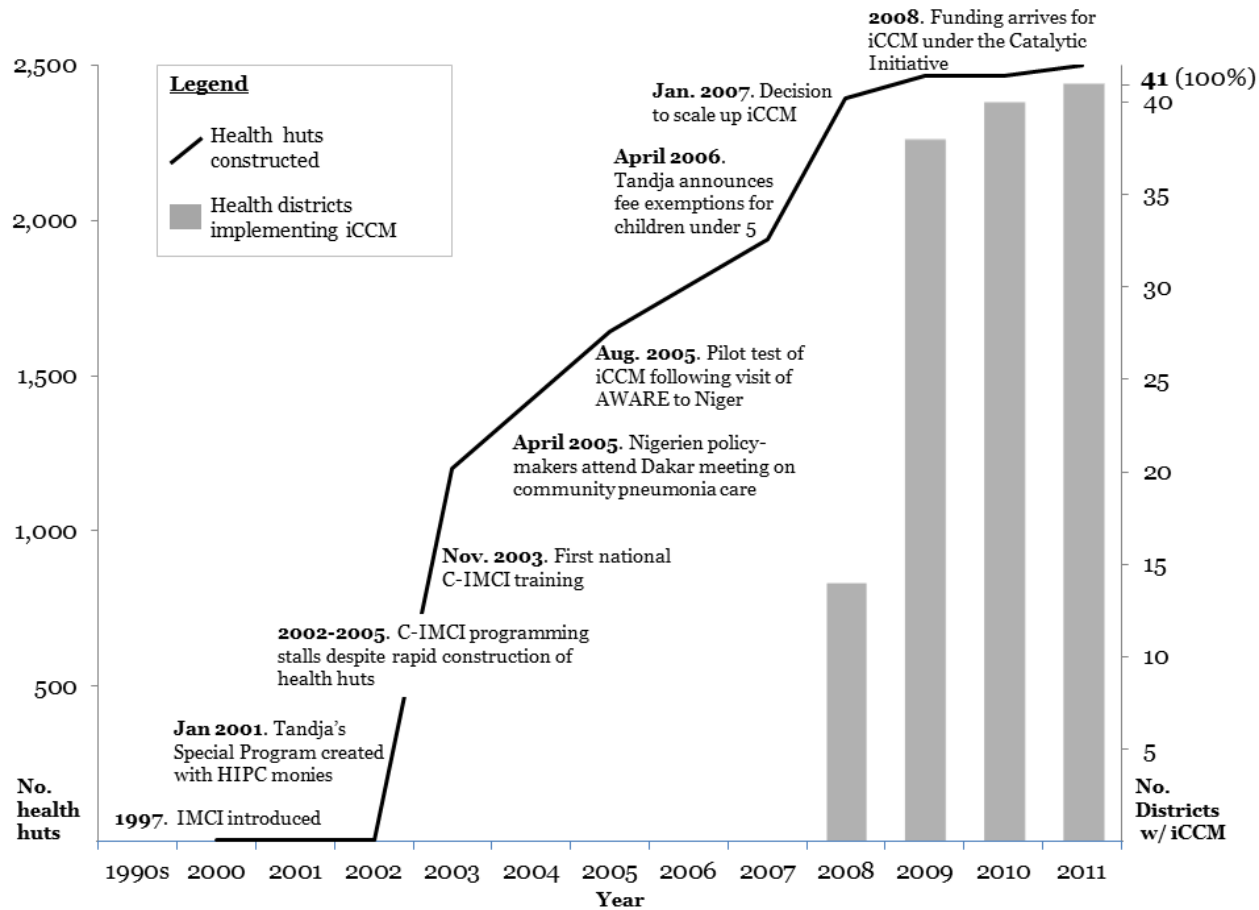
The elusive, contested and value-laden nature of power analysis gives rise to particular challenges. Prior to and throughout data collection and analysis, we kept detailed “reflexivity memos” to interrogate our assumptions and values and how these could impact data collection, analysis and findings. We also used regular debriefings to confront the analytical perspectives of authors from different “power perspectives,” namely those from Western institutions and West African researchers more intimately versed in local political dynamics and cultural norms.

5.5 Results

5.5.1 Origins & policy precedents of iCCM in Niger

The development of iCCM in Niger can be traced from the late 1990s to its full implementation in 2011 (**Figure 6**). Historically and into the 1990s, Niger suffered from extremely high rates of child mortality (estimated at 226 deaths per 1000 live births in 1998) which, combined with high fertility rates, meant that most Nigerien families could expect to lose at least one child (Amouzou, Habi et al. 2012). Efforts to introduce policy to combat this situation in the 1990s were challenged by ongoing political instability; however, in 1997 MOH adopted and began implementation of a major child survival program, IMCI (Integrated Management of Childhood Illness). IMCI included three components: clinical case management, health system strengthening and a “community” component to strengthen links between health facilities and the communities they served.

Figure 6 Timeline of iCCM policy development



IMCI was designed to improve child survival rates; however, its implementation in Niger was mainly limited to health facilities and thus failed to reach a large portion of Niger's children, who lacked access for economic, geographic and social reasons. And though political stability returned to Niger with the advent of the Fifth Republic in 1999, creating a more favorable environment to pursue policy enterprises, implementation of "community" IMCI remained stalled, even following a national orientation workshop in August 2002 and initial training sessions in 2003-2004 in Madarounfa and Matamèye. By 2007, only 10 of 42 health districts had initiated any activities on the community component (Hamsatou 2008):

"At that time there were no funds, there was nothing for IMCI. Much later we got funds from Unicef and WHO to conduct the first activities." (NIG-2012-7-12-2, *IMCI officer, government sector*)

Not only were funds missing to train personnel and carry out activities, community IMCI was meant to be operated out of a new type of health structure, the *case de santé* ("health hut"), created by ministerial decree in 1999. However, few health huts had been built by the time community IMCI stalled as a policy in the early 2000s.

5.5.2 Creating the infrastructure for iCCM: Tandja's health huts

The community-level health infrastructure onto which iCCM would be grafted began to be constructed in 2001 under the aegis of the "Special Program" of President Mamadou Tandja, elected in 1999, re-elected in 2004 and deposed by the Nigerien military in 2010 after an attempt to extend his rule known as "*Tazartché*" ("continuation" in Hausa). Tandja's "Special Program," created in 2001 to administer funds following Niger's admission to the Heavily Indebted Poor Countries (HIPC) initiative, financed and oversaw the construction of over 2,000 health huts, with construction advancing quickly under the supervision of

officers reporting directly to the president (*NIG-2012-7-11-1, NIG-2012-5-17-1*) (Bensaid and Mistycki May 2011). Funds were disbursed not through the government agencies but directly to Tandja's "friends," merchants and entrepreneurs who executed development projects including the building of schools, dams, wells and the health huts (Olivier de Sardan 2010; Körling 2011). Investments under the Special Program won Tandja support from farmers in rural areas home to four-fifths of the population, and would be used by Tandja's supporters as an argument in favor of *Tazartché*.

In the health sector, a number of respondents spoke with grudging admiration of Tandja's decision to create the health huts ("a courageous and salutary act") and attributed him sole credit for the decision (*NIG-2012-6-16, senior manager, international agency*):

"Tandja got the idea of health huts. The MOH was called upon [afterward]." (*NIG-2012-5-17-1, senior manager, government sector*)

At the Ministry, however, opposition to the health huts was widespread among leadership and personnel, who would have preferred to extend the "official" health system rather than offering "inferior medicine" to the poor (*NIG-2012-7-11-1, NIG-2012-7-3-2*). However, some respondents had a less conflictual view:

"There wasn't a problem, because the MOH is answerable to the presidency; the MOH doesn't have its own separate policy. Its policies come from the president. It's what the country wants and what the MOH implements." (*NIG-2012-6-14, IMCI trainer, government sector*)

Nonetheless, respondents suggested health huts were under-utilized in the early years of their construction (they had a reputation of being used to house donkeys and other

livestock) and the workers staffing them were not officially integrated into the MOH personnel hierarchy, suggesting possible contestation to Tandja's unilateral act among Ministry leadership and personnel (*NIG-2012-7-3-2*).

5.5.3 ICCM policy arrives in Niger

From 2001 to 2005, health huts were built at a rapid clip; however, the training of the community health workers to staff them lagged behind in terms of both the number of workers trained and the quality of training they received (*NIG-2012-7-3-2*, *NIG-2012-6-4*). At the same time, global-level actors were beginning to coalesce around and promote integrated community-based strategies resembling iCCM, focusing a number of early efforts in West Africa; the West African Health Organization (WAHO) would also identify iCCM as a “best practice” to promote in November 2005 (AWARE 2008; Dalglish, George et al. 2015). In April 2005, a WAHO consultant traveled to Niamey to perform a situation analysis for iCCM on the basis of several criteria, and notably the existence of “engaged [in-country] partners” ready to mobilize resources and share costs (Sall 2005; AWARE 2008). The same month, USAID's Action for West Africa Region – Reproductive Health (AWARE-RH) project sponsored a large meeting in Dakar along with Unicef, WHO and WAHO, inviting officials from a dozen countries to discuss a common regional approach to treating common childhood illnesses and learn from a Senegalese project on pneumonia (AWARE 2008). At that meeting,

“Every country presented what they intended to do at the community level. Niger stated that it will not limit itself to [pneumonia] case management ... but will rather implement IMCI as it is learnt at the clinical level and implement it at the community level.” (*NIG-2012-5-18, clinician*)

Following the Dakar meeting, AWARE and other partners including WHO, Unicef and WAHO traveled to Niger for a follow-up visit to advocate for iCCM, and were met with a “convergence of viewpoints” by Ministry officials (AWARE 2008). Respondents disagreed as to whether Ministry or external actors had provided the impetus to move forward:

“[W]e had the idea to develop an iCCM module ... with support from WHO, Unicef and the USAID AWARE project.” (NIG-2012-5-17-1, *senior manager, government sector*)

“I don’t think there was any difficulty ... We paid a visit to all the key officials at the MOH and explained to them what iCCM is, and they all accepted it.” (NIG-2012-7-12-3, *IMCI officer, international agency*)

In any case, a field trial was organized in Madarounfa district shortly thereafter, with financial and technical support provided by partners. Following the template of the Senegalese experience in community-level pneumonia care, international donors had initially favored training a non-professional cadre of community health volunteers known as *relais communautaires* or *mères éducatrices*. However, the *relais* were volunteers with no official existence in MOH texts and were thus ineligible to receive financial compensation, supplies and medicines via the health system, effectively blocking their participation in iCCM (AWARE 2008). International donors entered into discussions with Ministry officials to bring *relais* into the system; MOH “didn’t refuse but didn’t say yes” (NIG-2012-5-24, *senior manager, international agency*). Reluctant to hang iCCM on so tenuous a peg, donors relented to use community health workers, the cadre of health workers previously created to staff the health huts. This was the policy that Nigerien officials decided to scale up in January 2007 following positive results from the pilot’s mid-term evaluation (NIG-2012-5-24, NIG-2012-6-6) (AWARE 2008; Hamsatou 2008).

Aside from the necessity of a pilot project, Nigerien government respondents rarely mentioned the scientific evidence-building process leading up to iCCM, quite possibly since iCCM was seen as previously scientifically “validated” by external actors such as WHO, Unicef, WAHO and USAID. When prompted, Nigerien respondents said nonetheless that the decision to adopt iCCM was based on strong scientific evidence and that the policy was “proven,” often invoking the 2003 series on child survival in the *Lancet* as justification – a French-language summary of which Unicef had distributed to Nigerien government partners (NIG-2012-5-30, *senior manager, international agency*). Indeed, Nigerien policy makers’ access to the scientific literature appears to have been largely mediated by international agencies such as WHO and Unicef, who introduced studies and technical guidelines to “important professors and influential people” (NIG-2012-8-2, *international consultant*):

“Unicef is very powerful with respect to community-based components ... They say, ‘Here are the guidelines,’ and I think that the Ministry just complies. In Niger the Ministry is not very tough, not tough at all. When evidence is provided, it complies.”
(NIG-2012-6-6, *IMCI officer, international agency*)

This influence could originate in the superior technical capacity of outside agencies compared to Nigerien government offices (recall Unicef’s 55 technical experts, far more than in the Ministry’s child health office); further, Nigerien government documents tended to cite few or no articles from the scientific literature. Alternatively or additionally, state actors may have been influenced by the financial resources external actors could bring to bear to fund implementation of recommended policies (see below for a further discussion of this point).

5.5.4 User fees exemptions render care financially accessible

The steadily increasing number of health huts and decision to adopt iCCM were important steps toward making care available for children sick with common killer diseases; however, user fees for visits and medicines constituted an insurmountable financial barrier for many poor Nigerien families. This situation changed in 2006, when Tandja abolished user fees for pregnant women and children under five years of age, which he called his “gift to the women and children of Niger,” a decision that greatly increased the number of children able to benefit such improved care:

“Now what is the relationship between the health hut and fee exemptions? I would say that it is the opposite, it is fee exemptions that led to the boom of [the health hut]” (NIG-2012-5-24, *senior manager, international agency*)

Among health care workers as well, a large majority agreed that the abolition of user fees significantly boosted utilization and health-care seeking behavior among families of sick children (Ridde and Diarra 2009).

Far from originating among Nigerien health policy-makers at MOH or elsewhere, the abolition of user fees for children under five appears to have been a World Bank conditionality for releasing budgetary assistance during negotiations with the Nigerien Ministry of Finance in April 2006 (Ousseini 2011). Tandja was particularly sensitive to such inducements following the 2005-06 food crisis, which also created a crisis of government legitimacy (Körling 2011). Nigerien health authorities did not learn of the decision until a senior MOH official was pulled out of a meeting to quickly write up and sign the ministerial order (Ousseini 2011). Such hasty decision making meant that planning for the reform was essentially non-existent, and today the state’s reimbursement system for health facilities remains highly dysfunctional, plagued by double-billing and poor record keeping, and is in

arrears up to 20 billion CFA (US\$42 million) (Ousseini 2011; Ousseini and Kafando 2013). Respondents said such insufficient technical and managerial preparation for policy change was not unique to the decision on fee exemptions:

“You know, here [in Niger], political decisions always come before technical decisions.” (*NIG-2012-7-6, high official, government sector*)

Similar cases of government sensibility to outside funding incentives were also reported under current President Mahamadou Issoufou:

“[T]he government is very sensitive to the World Bank’s suspension of the subsidy. That’s why no later than last week, the President of the Republic decided to unblock an envelope of 800 million [CFA] to buy medicines, mosquito nets and quinine to cope with the [malaria] high-transmission period.” (*NIG-2012-7-19, senior manager, government sector*)

5.5.5 Financing & implementation

Funding for implementation arrived in October 2007 with the signing of a co-financing agreement between Unicef and CIDA as part of the global Catalytic Initiative (CI/IHSS), which focused on strengthening health systems to deliver high impact and cost effective interventions at the operational level. CIDA pledged US\$ 10 million for iCCM over six years (2007-2013), which was matched and administered in Niger by Unicef. A massive training campaign for community health workers took place in 2008-2009 and by 2012 over 3,000 health workers had been trained (MSP/DGSP/DOS 2012). The supply of essential drugs was provided by Unicef and delivered to the district level (*NIG-2012-5-24*). As a result, the number of operational health huts increased from 1,666 in 2007 to 2,501 in 2011,

with all districts implementing iCCM by the end of the period (Oliphant, Amouzou et al. 2011).

Alongside the state's contributions to iCCM in the form of Tandja's network of health huts and payment of health worker salaries, the provision of external resources to fund specific training and medicines suggests an interplay between government and external actors when deciding who pays for what. Just before the arrival of iCCM, in the 2005-2009 Health Development Plan, Ministry staff recommended formulating the health budget such that reproductive and child health programs existed as separate entities, rather than integrating them into regular Ministry functioning (MSP 2005). "These [programs] will certainly require specific funding," the document states, presumably referring to funding from external sources and later invoking the supposed availability of Unicef funding for IMCI programming over the 2004-2007 period. The same year (2005), Nigerien government expenditure on health per capita was at a relative low at \$4.2, whereas the country was experiencing an influx of development aid toward maternal, newborn and child health, which increased by 209% per live birth and 474% per child between 2003 and 2008 (Amouzou, Habi et al. 2012). While only circumstantial, this suggests Nigerien policymakers may have waited to see how donors would direct funds before acting themselves, though no specific evidence of strategizing or negotiating is contained in our data.

5.6 Discussion

Over a period of a decade, Nigerien policy-makers and their international partners cooperated to successfully prioritize, develop and implement iCCM, a policy benefiting mainly the poor, contributing to a significant reduction in child mortality. Previous policies had not significantly reduced child deaths because of Niger's limited health system, under

which many or even most families did not have access to basic curative care. In 2001 President Tandja began using an influx of HIPC funds to rapidly build over 2,000 health huts, simultaneously distributing patronage and gaining support among rural voters. Beginning in 2005, influential global-level partners working on child survival in West Africa, including USAID, Unicef, WHO and WAHO, found in Niger's Health Ministry a willing partner to move forward on a new "best practice," iCCM, whose technical content and "evidence-based" bona fides originated mainly outside of Niger. During a pilot test in 2006-2007, Ministry personnel re-oriented the policy with respect to important operational details, notably the choice of health care worker and link to Tandja's health huts. Contemporaneously, President Tandja acceded to a World Bank conditionality that Niger adopt fee exemptions for children under 5, making iCCM accessible to many more Nigerien families. Finally in late 2007, large sums of money from international donors became available to pay for health care worker training and essential medicines, allowing iCCM to be scaled up nationally.

An analysis of three dimensions of power in health policy making in the Nigerien case helps link these events and provide causal explanations. Power dynamics emerged from the political economy of the Nigerien state, including governance structures that underpinned Tandja's political power through enabling strongly centralized and personalized rule, his dependence on external financial resources, and the political imperative of distributing rents through patronage. In terms of technical expertise, we found domination by international actors over "scientific" expertise, whereas Ministry officials' contributed operational or health systems expertise. Actors and organizations external to the state were influential when exercising power derived from financial resources and technical expertise; many policy decisions related to iCCM originated at the interface between state and non-state spheres.

The dimensions of power also overlapped in ways that were difficult to separate, for example the mixed technical and financial power of external norm-setting agencies like WHO and Unicef.

Our case study of Niger focused on a country with a neo-patrimonial system of political economy, features of which warrant highlighting for our analysis to take on its full meaning. First, West African neo-patrimonial states are characterized by a confusion between public and private spheres, whereas in the West the separation between the two provides the foundation of procedural forms of power and governance (Olivier de Sardan 2004). Indeed neo-patrimonial states only *appear* to operate according to Weberian rational-legal principles in the form of modern bureaucracy, while instead being driven by the logic of patronage and reciprocal clientelism (Bratton and van de Walle 1994; Therkilsden 2005; Bach 2012). This presents special challenges for researchers, who find that in state business the “formal” and the “real” hardly coincide, official organograms mask real-life power relationships and budgets are “pure fiction” (Olivier de Sardan 2004). In our case study, we observed that procedural power held little sway in that the MOH was often excluded from health policy decision making and that powerful actions took place outside of the usual government channels, as with the Special Program.

Indeed, key decisions around iCCM were highly personalized (in the case of Tandja) and strategically oriented toward his political longevity, notably because they 1) enabled the smooth functioning of his patronage machine, and 2) allowed him to credibly claim political legitimacy. First, the Special Program has already been discussed as an efficient patronage distribution system under Tandja’s control, which he used in part to create the underlying infrastructure for iCCM. However, Tandja’s reliance on external resources to fund

government and political activities meant he was vulnerable to conditionalities set by external actors able to offer financial backing or relief. Indeed, with a ratio of development aid to total government expenditure as high as 91% in some years, Nigerien authorities relied on outside financial resources for everyday government expenditures, including patronage (Moss and Subramanian 2005). Times of crisis can exacerbate this dependency: in 2006, Tandja badly needed funds to quell unrest following the 2005-06 food crisis and tax increases on food, water and electricity, perhaps rendering him especially amenable to the World Bank's conditionality on fee exemptions for children under five (Körling 2011; Ousseini 2011).

Second, Tandja sought to further his career by establishing political legitimacy beyond the "instrumental legitimacy of systematic patronage," a difficult task in a neo-patrimonial states because their ruling mechanisms are imported from the West and thus not linked to traditional African forms of governance and legitimacy (Englebert 2000). To this point, when Tandja called the user fee exemptions his "gift to Niger's women and children," we see resonance with the "Father-Chief" archetype of African political authority, who gains legitimacy by taking care of the nation/family, notably its most vulnerable members (Kelsall 2011). Tandja's decision to build the health huts (along with other development projects under the Special Program) was further cited by supporters as evidence of "how much [Tandja] has invested himself in improving life conditions for the average Nigerien" and used as an argument for extending his rule under *Tazartché* (Guede 2006). Here, similarly, we see Tandja positioned as the chief who is entitled to eat well only "if his children are [not] suffering" (Kelsall 2011).

Such rhetorical orientations are not incidental, and indeed cannot be divorced from governance systems in operation, offering clues about conditions under which the poor are most likely to benefit (Kelsall 2011). In neo-patrimonial states, positive development outcomes for poor populations may be more likely to occur when leaders 1) centralize rent seeking and rent management and 2) are oriented toward the long term (Kelsall 2011). Our results are fully in line with these findings: health huts for the poor were built under Tandja's centralized rent management scheme (the Special Program) and his long-term time horizon (*Tazartché*, continuation) was clearly stated. If these forms of governance seem in conflict with tenets of Western-style democracy, it is because they are; hence calls for global policy-makers to “go with the grain” of implementation countries and work within their cultural and institutional contexts (Commission_for_Africa 2005; Kelsall 2011). Indeed, calls to improve governance in African countries and other LMICs often do not recognize the range of institutions that can support better development performance (Wild, Booth et al. 2015).

One feature of this case study was the relatively small role for Ministry of Health technical expertise beyond operational and regulatory decisions. Ministry officials gleaned scientific information from international agencies connected to large transnational networks of experts working to synthesize research evidence; the core technical content of iCCM was imported from a pre-existing model. Further Ministry technical staff were entirely left out of several major policy decisions underlying iCCM, learning about the fee exemptions only when asked to issue the ministerial order; many also opposed the health huts at their debut. Nigerien government officials did organize implementation of iCCM, with subsequent evaluations showing good quality of care; they also exercised power in linking incoming funds from the Catalytic Initiative to the health huts and resisting the use of *relais* in favor of paid

community health workers, a key factor in ensuring iCCM's geographic reach and sustainability within the health system (Seidou 2008; Bensaid and Gali 2009).

Our case study of power in policy making in Niger reveals iCCM to be founded on political conditions favoring positive outcomes for the poor, well-timed injections of external funds (the HIPC monies and CIDA/Unicef implementation financing), a (sometimes unstated) pro-poor agenda at external agencies, and the ability of Ministry officials to complement “scientific” evidence with operational and health systems expertise. Among others, the UK Department for International Development (DFID) and the Swedish development agency (Sida) have used power analyses to inform policy initiatives; however many development programs fail to consider such issues and, we argue, risk squandering their resources. Health policies in particular tend to be more context-specific than other policies, as they involve political, social, economic and cultural considerations (Walt and Gilson 1994) – but while accounting for political and contextual dynamics “might seem obvious ... it is rarely the norm” (Wild, Booth et al. 2015). Researchers and proponents of pro-poor health policies in LMICs should consider placing more attention on understanding individual country contexts, particularly as policies are unlikely to be successfully transferred when they conflict with national power structures (Reyna 2007).

5.7 Conclusion

In the literature on health policy reform, power is frequently invoked to explain outcomes but more rarely defined or analyzed, especially in studies focusing on LMICs. We identify dimensions of power relevant to a case study of iCCM in Niger – political authority, financial resources, and technical expertise – and apply these to show why this pro-poor health policy was successfully developed and implemented in Niger.

Understandings of power in policy making in LMICs would be strengthened by multiple case studies, which are needed to strengthen theoretical claims; however, the deep understanding of national context required makes such research practically difficult to undertake. Case study series and international collaborations by researchers interested in questions of power may provide a way forward in exploring power, an important if enigmatic determinant of health policy and population health.

Chapter 6. Research utilization and knowledge translation in low-resource environments: a case study of child survival policy in Niger

6.1 Abstract

Recent years have seen calls to enhance the use of scientific evidence in international health and development policy to optimize scarce resources and create maximally beneficial policies. However, proposed analytic frameworks for understanding how knowledge and research evidence are translated into policy were created using data and observations mainly from Western countries and may not account for dynamics specific to policy environments in low- and middle-income countries (LMICs). With these considerations in mind, we examine processes of health policy development in Niger, a low-income West African country that adopted and implemented integrated community case management (iCCM) beginning in 2007, resulting in measurable declines in child mortality. Data collection included in-depth interviews with policy actors in Niger (N=32), document review (N=103) and direct observation of policy forums related to iCCM (N=3); we analyzed data using process tracing methodology and an Aristotelian definition of “knowledge” as consisting of 1) *episteme* (facts), 2) *techne* (skills) and 3) *phronesis* (practical wisdom), while also applying a critical perspective to understand issues of power and domination. We find sharp differentials in policy-makers’ possession and use of codified forms of knowledge (*episteme*), Nigerien policy officers access to which was highly mediated by actors at bilateral and multi-lateral agencies; similarly, these latter had greater skills and capacity (*techne*) to produce and interpret research evidence. Practical wisdom (*phronesis*) was more evenly distributed among actors, who used ethical arguments, attention to operational details and historical reasoning to make decisions later found to be key to iCCM’s success. Researchers seeking to move forward theoretically and conceptually on research utilization and knowledge translation

should examine policy environments in LMICs, which differ from Western countries due to their limited health infrastructure and human resources coupled with large aid flows, conditions that provide external actors significant leverage in policy discussions and decisions-making.

6.2 Introduction

The key benefit of evidence-based policy-making is that it is believed to produce higher quality policies, with correspondingly better outcomes for populations (UK Department of Environment Food and Rural Affairs 2006). When it comes to child survival policy, the stakes are incredibly high: each year an estimated 6.3 million children under 5 die, nearly all in low- and middle-income countries (LMICs), with three leading causes of death being pneumonia (15% of deaths), diarrhea (9%), and malaria (7%) (Liu, Johnson et al. 2012). Policies to increase access to prompt and effective treatment of childhood illness are crucial to reducing child mortality; as a result, global actors developed integrated community case management of childhood illness (iCCM), an evidence-based strategy to provide life-saving care for these three diseases (Young, Wolfheim et al. 2012). To date, nearly all African countries have adopted some form of iCCM, including CCM for malaria, diarrhea or pneumonia or some combination thereof (Rasanathan, Muñiz et al. 2014).

In recent years there have been calls to move toward evidence-informed decision-making in global health and public policy, following observations in the 1990s and early 2000s that health policies did not reflect evidence as much as they could and that stores of useful research were going to waste (Davis and Howden-Chapman 1996; Lavis, Ross et al. 2002; Hanney, Gonzalez-Block et al. 2003). Concurrently, there have been new directions in the kinds of evidence considered necessary and appropriate as a basis for health policy, with a

growing consensus that earlier definitions of evidence as “statistical inference about events in populations that are studied prospectively” were far too narrow, and should be expanded to include observational and qualitative studies and health policy and systems research (HPSR) (Black 2001; Sturm 2002; Fox 2005). Following a 2004 Mexico City summit on translating evidence into practice, WHO issued a resolution “to establish or strengthen mechanisms to transfer knowledge in support of evidence-based public health and health-care delivery systems” and began giving greater attention to the issue of evidence utilization including in LMICs (WHO 2004). Today, there are a number of groups focusing on generating, synthesizing and communicating relevant research findings, including the WHO Alliance for HPSR and the Evidence-Informed Policy Network (EVIPNet), as well as tools like SUPPORT and SURE, which combine policy briefs, research syntheses and analyses of policy options and potential consequences and are aimed at health policy decision-makers, including in LMICs (Rosenbaum, Glenton et al. 2011).

In this article, we consider existing models of research utilization and knowledge translation with respect to health policy and extract theoretical categories relevant to LMICs, then apply these to a case study of iCCM policy creation in Niger, a low-income West African country that historically has had very high rates of child mortality. We first provide a brief overview of the literature and reflect upon issues that arise when studying evidence use and policy development in LMICs. Next we provide a case study of research utilization and knowledge translation processes for iCCM in Niger. Finally, we discuss lessons learned and suggest future directions for research on evidence-based policy making in LMICs.

6.3 Background

In the fields of public health, public policy, political science and international relations, there are broad literatures on the related concepts of research utilization, with its “many meanings,” and knowledge translation, often defined as “the exchange, synthesis and effective communication of reliable and relevant research results” for the purposes of policy-making (Weiss 1979; Mills, Bennett et al. 2004). Within these literatures there is a proliferation of models describing under what circumstances policy-makers utilize research evidence and how they translate knowledge into specific policies. While containing many insights, the research on these topics has suffered from epistemological and conceptual difficulties related to the intersection of disciplinary standpoints used to study these topics, and a nearly exclusive focus on Western countries and corresponding lack of research in LMICs. In this section, we examine these issues, then offer theoretical directions for examining research utilization and knowledge translation in health policy making in LMICs, to be applied during our case study of iCCM in Niger.

First, the concepts of research utilization and knowledge translation exist at an intersection of disciplines, giving rise to conflicting theoretical understandings about the nature of knowledge and the processes by which policy makers make use of knowledge to develop policy (Stone 2004; Greenhalgh and Wieringa 2011). Of particular note is the epistemological conflict arising between medical and health services research, which tends to have an objective view of knowledge as pre-existing and “untouched by human hands,” and those coming out of disciplines such as sociology, organizational management, and international relations, which view knowledge as “constructed” by human actors, and thus embedded in human reality with all its societal complications. Most often, researchers in public health have adopted the former perspective, and are “imbued with the *ideal model of the*

natural sciences” (Walt 1994), whereas the international relations and sociology literatures use a broader definition of knowledge and emphasize the spread of norms influencing how knowledge is translated (Stone 2004). Indeed, some analysts argue the theoretical difficulties encountered in the “evidence-based policy-making” paradigm have everything to do with its origins in the highly objectivist “evidence-based medicine” movement (Behague, Tawiah et al. 2009) and commentators in the public health literature have frequently argued that models of evidence-based policy-making rest too much on a rational view of policy-making (Hanney, Gonzalez-Block et al. 2003; Morgan-Trimmer 2014).

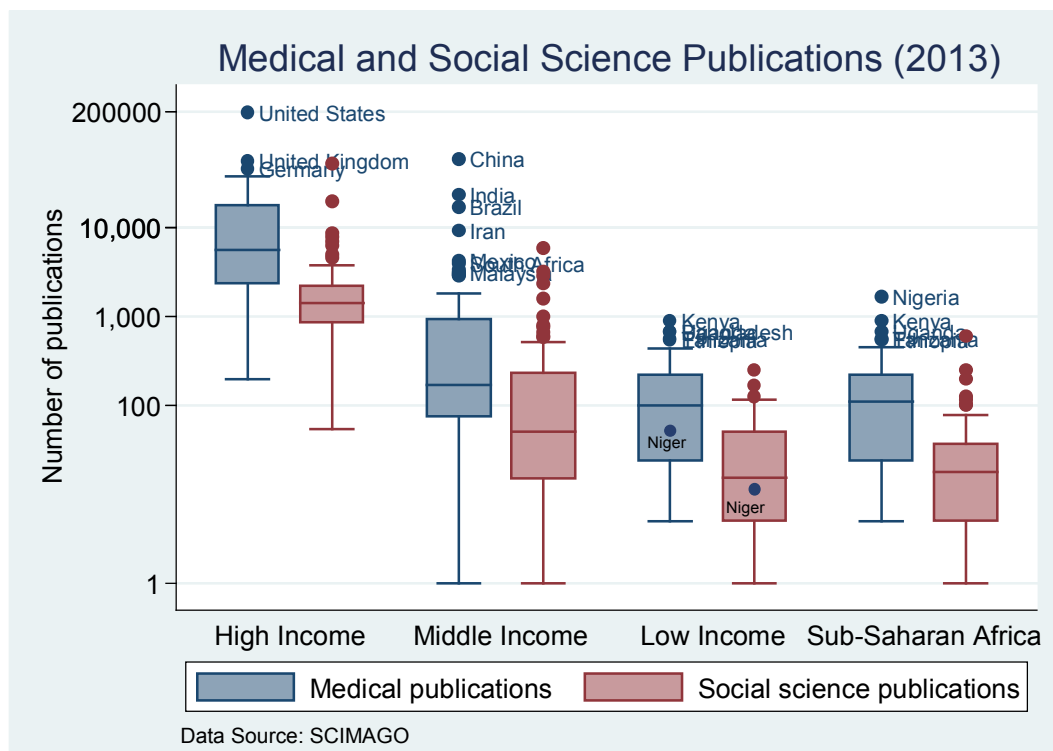
Despite this lively conceptual debate, relatively few studies have been published on research utilization and knowledge translation in LMICs as they relate to health policy development. While articles in the literature do apply models of evidence to case studies of health policy in LMICs (Rodriguez, Shearer et al. 2015), existing studies tend to focus on the *lack* of research utilization or perceived failures in knowledge translation, such as the under-use of relevant evidence or data to inform decision-making (Gupta, Zurn et al. 2003) or specific barriers to using research (Aaserud, Lewin et al. 2005; Mubyazi and Gonzalez-Block 2005; Woelk, Daniels et al. 2009). Several studies discuss political factors as barriers to evidence-based health policy-making in LMICs, including a multi-country case study on the introduction of magnesium sulfate for pre-eclampsia, in which respondents in LMICs cited a lack of political will and poor understanding and involvement of policymakers and public authorities, factors discussed much less frequently in high-income countries (Aaserud, Lewin et al. 2005; Hunsmann 2012). Despite these difficulties, policymakers in LMICs nearly universally cite evidence as being crucial to making good policy decisions (Burchett, Mounier-Jack et al. 2012).

Translating research knowledge into policy is a context sensitive process and it behooves us to consider the ways in which health policy making environments in LMICs differ from the Western countries in which most studies on research utilization and knowledge translation have taken place (Woelk, Daniels et al. 2009). First and foremost, LMICs by definition have comparatively fewer resources to devote to the health policies they select, as well as higher levels of constraints in terms of the service delivery that can reasonably be expected of health systems. LMICs also have comparatively fewer human resources, quantitatively and often qualitatively, resulting in lesser capacity to assess evidence and incorporate it into policy in the first place. In sub-Saharan Africa, research capacity in both health and the social sciences is hampered by under-investment in research and universities, resulting in a small number of researchers, dilapidated libraries and infrastructure, and lack of status or consideration for teachers and researchers (Olivier de Sardan and Tidjani Alou 2012). Furthermore, a substantial portion of what human resources do exist are lost to higher-income countries: Kasper and Bajunirwe estimate that in half of sub-Saharan African countries, more than 30% of physicians trained locally are “lost” to migration (Kasper and Bajunirwe 2012). At the same time, alongside massive aid flows, there are substantial numbers of qualified human and material resources at external organizations such as bilateral and multi-lateral agencies and non-governmental organizations (Pallas, Nonvignon et al. 2015).

Importantly, the “knowledge” available to be used towards policy making in LMICs is both limited in amount and frequently conditioned by viewpoints external to the national actors who will use them to create policy. First, the mismatch between investments and needs in health research has been characterized since the 1990s as the “10/90 gap,” which refers to the Global Forum for Health Research’s finding that only 10% of worldwide expenditure on

health research goes toward problems primarily affecting the poorest 90% of the world's population (Curat, de Francisco et al. 2004). A comparison of the number of medical and social science publications annually by world region and income group in 2013 demonstrates the ongoing predominance of publications by authors affiliated with Western institutions, to the extent that a logarithmic scale is required (**Figure 7**). Similarly, the most influential publications in the scientific literature as measured by citation frequency are rarely produced by authors affiliated with institutions in LMICs: of the top 100 most cited articles in the Science Citation Index, the United States, Canada and the United Kingdom accounted for 89 and none had a first author from an LMIC (Uthman, Okwundu et al. 2013).

Figure 7 Medical and Social Science Publications in Countries by Income Group (2013)



Furthermore, what research on LMICs that does exist is often “the fruit of external logics,” meaning that it most often initiated and financed, not to mention undertaken and interpreted, by actors not physically located in the countries that are the subject of their research (Olivier de Sardan and Tidjani Alou 2012). In LMICs, the vacuum of domestically-produced research is filled by studies that are initiated, produced and published by researchers based outside the country and/or financed by bilateral or multi-lateral aid agencies: as Oliver de Sardan and Tidjani Alou put it with respect to social science research in African countries: “African states allocate very small budgets to research. Research in these countries is most often financed by bilateral or multilateral aid agencies, which indicate their priorities and their expectations. They considerably influence research topics corresponding to their specific priorities” (Olivier de Sardan and Tidjani Alou 2012). Thus, the construction of knowledge available for policy making in LMICs is already encoded with assumptions, normative positions and prioritization schemes that external not just to the government but to the entire national context to a much greater extent than in Western countries.

In some ways, the confluence of theoretical and epistemological disorder and lack of research in LMICs on the topics of research utilization and knowledge translation opens a conceptual window, inviting us to re-define our terms while broadening the analysis to include a wealth of new cases differing substantially from those previously studied. Greenhalgh and Weiringa offer a number of new directions to move beyond the current conceptual difficulties, such as breaking down the implied separation between knowledge and practice encompassed in formulations such as the “know-do gap” and the term “knowledge translation” itself (Greenhalgh and Wieringa 2011). Instead, they propose using an Aristotelian view of knowledge based on three components: the *episteme* (facts or explicit

knowledge, including notably the scientific literature), *techné* (skill or practice) and *phronesis* (situation-specific practical wisdom). *Phronesis* is perhaps the slipperiest component of the Aristotelian conception of knowledge, usually called “practical wisdom,” more traditionally translated as “prudence,” and sometimes defined as the ability to apply general rules to particular situations (Montgomery 2006). It is different from *techné* in that it is not a pure skill but also involves ethical and practical considerations about which ends to pursue. For the purposes of studying research utilization in LMICs, this framework is appealing, as it calls upon us to consider forms of knowledge beyond those that are codified in the *episteme*, such as policymakers’ practical wisdom (*phronesis*), as well as look at issues of capacity and quality under the rubric of *techné*.

Greenhalgh and other analysts further call on researchers to adopt a critical perspective and examine the role of power in research utilization, all the more so given stark power differentials outlined in discussion of health policy-making environments in LMICs above (Behague, Tawiah et al. 2009; Greenhalgh and Wieringa 2011; Shiffman 2014). A critical perspective of policy-making processes requires the analysis of both hard forms of power, such those derived from resource imbalances, and softer forms of power which pervade via norms, cognitive frameworks, and ideas as seemingly elementary as what is “true” or “rational” (Morgan-Trimmer 2014). These “softer” forms of power were a major theme of the Frankfurt School of neo-Marxist social theorists, who pointed to forms of domination exercised through ideology, social or intellectual norms, and criticized positivism as an ahistorical and insufficiently political philosophy and methodology that failed to sufficiently problematize the concept of knowledge (Haas 1992). For the purposes of studying research utilization in LMICs, this perspective brings us to ask how “knowledge” is defined and by

whom, the identities of the producers of accepted forms of knowledge, and structures that reproduce the norms that define how knowledge should be used.

6.4 Methods

This study relies on case study methodology, a form of research useful for reconstructing processes holistically to examine the processes at work (Yin 1994). Our sources of data were in-depth semi-structured interviews, a document review and direct observation of policy forums, all of which are techniques useful in unraveling complex situations, appropriate to studies of policy made at the national level, and widely used in studies on research utilization (Hanney, Gonzalez-Block et al. 2003).

Data collection took place in Niamey, Niger from February to August 2012. For the document review, we consulted 103 documents of several types related to iCCM policy, including:

- *Official expressions of policy*: policy documents, implementation tools, training manuals, national strategies (n=22);
- *Internal documents or “gray” literature*: draft reports, internal reports and memos, PowerPoint presentations from meetings, funding requests, field evaluations, midterm reports (n=29);
- *Scientific articles, research or data*: articles from the scientific literature, doctoral dissertations, statistical surveys, action research studies (n=31);
- *Other*: laws and regulations, press articles, newsletters, cooperation agreements between Niger and external actors (n=21).

Documents were subjected to close reading; we systematically extracted information on authorship, the purpose of the document, arguments and justifications put forward, and the nature and quality of scientific or technical argumentation.

Interviews were conducted with 32 individuals involved in iCCM policy formulation, 28 of which occurred in country; the average length of interviews was 57 minutes. Key individuals were identified through the document review and snowball sampling and included:

- Directors of the Ministry of Health's child health office between 1996 and 2012;
- Senior and mid-level Ministry officials;
- Staff at donor and technical assistance bodies in Niger including WHO, Unicef, USAID;
- Representatives of professional associations, clinicians, and national pediatric health trainers;
- Members of local and international NGOs and international consultants.

Interviews were conducted in French and transcribed in-country. Finally, we observed three national policy forums on issues related to iCCM and child health in Niamey¹; in so doing, we were able to observe interviewees and other policy actors in real-life situations of policy discussions and negotiations, conditions that tend to reveal existing power relations and help identify controversial issues (Hunsmann 2012).

Data analysis was based on process tracing, a technique to combine multiple sources of information to “minimize bias, establish common patterns of causality, and reveal social and political processes” (Yin 1994; Shiffman, Stanton et al. 2004). In the context of our study, process tracing can be used to demonstrate patterns of evidence sharing and directionality in flows of information, following the spread of knowledge for policy-making among groups of actors (Lee and Strang 2006). To perform process tracing we compiled a timeline of policy development in Niger as a basis for analysis from interview and document data. Interviews and notes from participant observation were coded for categories related to knowledge and practice, including different types of evidence or knowledge and their utilization; process

¹ The three forums were 1) a validation workshop to approve the new minimum package of care for health posts (Niamey, June 2012), 2) a national workshop to share results of a pilot program on neo-natal care (Niamey, July 2012), and 3) a workshop on home malaria care (Niamey, July 2012).

such as learning, argumentation, and framing; and political factors and power dynamics in policy-making using NVivo 9 (QSR 2010). Following this descriptive analysis, we analyzed our data using the theoretical categories discussed above, namely by using an Aristotelian definition of “knowledge” and applying a critical perspective to understanding the knowledge translation process.

This research was part of a larger multi-country study of iCCM policy formulation in Africa; it was deemed exempt from ethical review by the Johns Hopkins School of Public Health and was approved by Niger’s national ethics committee and Ministry of Higher Education and Scientific Research.

6.5 Results

The development of child survival policies leading up to iCCM in Niger can be traced from predecessor policies such as Integrated Management of Childhood Illness (IMCI) in the late 1990s to the beginning of policy discussions in 2005, the adoption of iCCM in 2007, and finally its full implementation by the end of 2011. Policy discussions on iCCM began in earnest leading up to April 2005, when representatives of Niger’s Ministry of Health (MOH) participated in a meeting sponsored by USAID’s AWARE-RH project in Dakar to learn from a Senegalese project on community-based management of pneumonia (AWARE 2008). The Nigerien delegation’s presentation at that meeting proposed an integrated approach to community level care including malaria, diarrhea and pneumonia, an initiative that gained momentum when AWARE and other partners traveled to Niger for a follow-up visit to discuss iCCM with MOH officials in August of the same year. Shortly thereafter a field trial was organized in Madarounfa district, led by MOH with the necessary implementation tools developed in partnership with technicians from AWARE-RH, WHO and Unicef. In January

2007, the results of the mid-term evaluation proved satisfactory and Nigerien officials decided to scale up iCCM, with funding for implementation arriving in October 2007 following the signing of a co-financing agreement between the Canadian international development agency (CIDA, now DFATD) and Unicef (AWARE 2008; Hamsatou 2008).

6.5.1 Episteme: Codified knowledge “comes” from outside

Three main types of “facts” potentially available to policy-makers during issue identification and iCCM policy formulation were: 1) the scientific literature (including clinical and epidemiological studies but also health systems and policy research, qualitative studies, etc.) 2) international technical directives and guidelines², and 3) epidemiological and demographic data and statistics. Nigerien government officials more frequently described using data and statistics to understand the country’s needs and tailor international guidelines to the country context, whereas external actors cited the scientific literature as the basis for child survival policies in Niger; furthermore Nigerien government officials’ access to the *episteme* was often mediated by international actors.

First, Nigerien government officials often mentioned relying on international norms, directives, and technical guidelines to guide policy choices, which international agencies such as WHO and Unicef promoted by, for example, introducing them to “important professors and influential people” (NIG-2012-8-2, *international consultant*). Nigerien government respondents viewed guidelines as being based on the latest and best scientific research, and therefore essentially “facts,” though facts in need of adaptation to the country context:

² Some readers may question our inclusion of international directives and guidelines in the *episteme*, judging that they are not “pure” knowledge in that they represent an institutional or somehow specific point of view. Our rejoinder, borrowed from the constructivists, is that *all* types of knowledge are similarly encoded with their origins; as such guidelines are merely another codified form of knowledge within the *episteme*.

“We base ourselves on international norms. Because there are international norms that come, international directives that come. And we, we take them and adapt them to our context.” (*NIG-2012-5-21, mid-level child health officer, MOH*)

“They are universal practices developed by WHO and Unicef. Then the countries take them and adapt them at their level.” (*NIG-2012-5-11, mid-level child health officer, MOH*)

To this end, government stakeholders also frequently mentioned data and statistics about Niger’s demographic and epidemiological profile, including the low density of Niger’s population, high percentage of rural dwellers and improvements in the child mortality rate following policy implementation (*NIG-2012-5-18, NIG-2012-5-21*). Such data was from sources such as the annual child mortality surveys led by WHO, Unicef, the World Bank, and others (*NIG-2012-5-30*) and the Demographic and Health Surveys (DHS) funded by USAID (*NIG-2012-5-21*).

Scientific studies of any kind were rarely spontaneously evoked by government respondents, and brought up somewhat more frequently by officials at bilateral and multilateral partner organizations. This is perhaps due to the fact that government stakeholders had limited access to the scientific literature, as one Nigerien respondent who had worked both at MOH and an international agency described:

“With scientific data, it’s a continual learning process. At any time I can get the information [here at the international agency]. But when I was at the Ministry from 2000 to 2004, internet was not so advanced.³ I have better access to information

³ Nor is it today. – SD

here than there. Science evolves.” (NIG-2012-6-4, *child health specialist, international agency*)

Government officials nonetheless stayed current on the latest scientific information via international conferences on child health and related issues, with their participation most often paid for by international partners:

“It helps tremendously. When they go to major conferences they always come back with updated knowledge.” (NIG-2012-6-16, *senior manager, international agency*)

The only specific studies brought up by respondents appeared in the *Lancet*, specifically its series on neo-natal and child survival (mentioned by two Nigerien and two international respondents). One Nigerien said,

“It was only through the *Lancet* that we came to know that to save the life of a newborn, [sophisticated material] is not necessary ... Well, I think that it has been very influential; it was a ‘cry from the heart’ as we say, and it was an awareness raiser at the global level about massive newborn mortality.” (NIG-2012-6-7, *clinician*)

Influential articles such as these were often circulated by WHO and other agencies, who made French-language summaries, for example of the 2003 *Lancet* series on child survival, which Unicef “didn’t [translate] ... but took elements of” (NIG-2012-5-30, NIG-2012-6-16).

In this way, access to the scientific literature was often mediated by international actors, whose interpretations government actors accepted because of the perceived authority and legitimacy of the former:

“The role of evidence is that there is no point reinventing the wheel. These are things that are immediately applicable because they have proven their worth. They

do not need to be tested anymore and this makes you move faster to achieve a reduction in child mortality and morbidity. So ... we don't reinvent the wheel of history, it's already done, so now we must consume.” (NIG-2012-6-7, *government clinician*)

6.5.2 Techne: In-country capacity no match for international agencies

Elements of *techne*, defined here as the skills needed by policy-makers to produce, interpret and communicate relevant research, evidence or knowledge, again revealed a divide between the resources and capacities of Nigerien and international stakeholders. On the one hand, government offices are under-staffed drawing upon a severely restricted pool of qualified policy-makers:

“[W]hen we started [in the 1980s], Niger had no more than three or four pediatricians. Today, there are not many of them, but they exceed forty! Currently, they are trained here [in Niger], which will enhance the resource in terms of number and quality.” (NIG-2012-6-7, *government clinician*)

In terms of the production of knowledge relevant to policy, beyond low Nigerien participation in the scientific literature (**Figure 7**), operational research also poses ongoing difficulties for government programs, as at a national workshop presenting results of a pilot project of iCCM for newborns (July 2012) during which numerous attendees expressed regret at the lack of baseline or reference group and subsequent impossibility of drawing meaningful conclusions. “There were problems with respect to the data, it must be said; we have nothing to hide,” recognized one official linked with the research (NIG-2012-6-07).

In terms of interpreting and analyzing research, government documents such as strategies, working papers and implementation tools frequently omit citations or refer to publications in

a vague manner (“according to a Kenyan study”), although poor citation habits do not necessarily indicate a failure to utilize research results (Zataka 2005; Hamsatou 2008; PNL 2012). Government analytical capabilities also appeared to be limited with respect to language skills (few were comfortable in English, the language of the international scientific literature), as well as quantitative data and statistics – officials said they relied on data from DHS rather than from the national health information system because the former are “pre-analyzed” in the accompanying reports:

“Well, we have DHS, which is done every 10 years; we’re obliged to rely on that ... The SNIS [national health information system] gives raw results, like that. It doesn’t allow one to formulate objectives.” (NIG-2012-5-21, *mid-level child health officer, MOH*)

At the same time, international agencies staffed large child health offices with qualified Nigerien and international technical staff; the Unicef campus in Niamey counts over 55 technical experts (including 25 local and 30 international staff), not including consultants hired on a temporary basis, dwarfing the child health office at MOH (Touré personal communication). Furthermore, international agencies skim off the best and brightest of government technicians in Niger (and elsewhere) by offering substantially higher salaries, substantially weakening government planning capacity (Lavigne Delville and Abdelkader 2010). Among those Nigerien experts who stay in the civil service, external influences are apparent in other ways, such as via the training and educational background of Nigerien clinicians, whose biases and viewpoints filter down to the generation of Nigerien clinicians they are training:

“Because all these professors were educated overseas, it has been quite hard to get them to accept exclusive breastfeeding from 0 to 6 months, it has also been very

tough to get them promote home-made ORS by just mixing salt and sugar in water.

These were revolutionary changes. Yet, their health facilities were reference facilities, supporting medical students and in-service training; therefore, when they are not convinced, it is hard.” (NIG-2012-8-2, *international consultant*)

Nonetheless, Nigerien policy makers appeared to possess significant skills when it came to building on policy models from similar contexts, most notably countries in the sub-region, in processes that went beyond mere imitation. Nigerien government respondents frequently mentioned nearby countries that had tested policy innovations similar to iCCM; the most pertinent examples, they said, were conducted in countries with similar epidemiological and socio-cultural profiles, which provided a model of success and facilitated the sharing of implementation tools, training modules and so on. Respondents mentioned relevant experiences in Mali, Benin, Togo and especially Senegal, sometimes equating the importance of other countries’ experiences with that of scientific evidence in informing policy development:

“There was scientific evidence showing that you can treat certain diseases at the community level. And there were other countries’ experiences. Because Niger went to Senegal to see how it worked.” (NIG-2012-5-17-2, *head of child health, government*)

As mentioned previously, Senegal’s pilot project was one of the first in sub-Saharan Africa to include community-level treatment of pneumonia – yet it inspired Nigerien officials to design an integrated curative package for the three main pathologies, which they presented at the 2005 Dakar meeting:

“Every country presented what they intended to do at community level. So, Niger stated that it will not limit itself to [pneumonia] case management at community

level, but will rather implement IMCI as it is learnt at the clinical level and implement it at the community level. So the process should be the same, all the symptoms will be observed.” (NIG-2012-5-18, *clinician, government sector*)

Thus, despite limited abilities to access and use the international scientific literature, Nigerien policymakers acted in intellectually entrepreneurial and innovative ways, making use of policy examples and extrapolating their relevance to the Nigerien context.

6.5.3 Phronesis: International policy, common-sense Nigerien solutions

Phronesis, often translated as “practical wisdom,” has also been defined as the ability to apply general rules to particular situations, an aspect of the concept particularly relevant to the translation of globally-produced health policies to local contexts (Montgomery 2006).

We identify four types of practical wisdom potentially available for the iCCM policy-making process: 1) logical or common-sense arguments, 2) attention to operational details, 3) pilot projects, and 4) historical analysis. First, Nigerien and international policy actors used logical arguments to connect the problem of child mortality in Niger to the solution of community-level care. Nigeriens respondents frequently mentioned factors such as the geographic size of the country and the small number of health facilities to explain why children “died at home” and evoke the need to shift tasks to community health workers. One respondent said,

“There are not enough pediatricians ... If one says, it is necessary that pediatricians treat children, how many can he treat? [Laugh] It is not possible, the country is large and there is I believe 40% of the population who are children. ... If one says it must be a pediatrician who treats them, we won’t get anywhere. But with task shifting, with small skills, they can save many lives.” (NIG-2012-7-11-2, *IMCI officer, government sector*)

Within both government and international agency offices, the most influential holdouts to task-shifting policies were often medical doctors, some of whom were trained abroad, and whose clinical perspective appears to have posed an initial obstacle to what were later accepted as “common-sense” arguments:

“‘This is second-rate medicine, low-grade medicine. You are going to kill children, etc.’ After having said all this, we were told the number of children who die every day in the community. We think we see pediatric cases, in fact we don’t see anything: 80% of children die in the community ... Hey! Are you scratching your head, so, doctor, will you be the one to provide care for all these children? No? Will you let them die? No. So, what will you do? Discussions on the issue are now starting.”

(NIG-2012-6-16, senior manager, multi-lateral agency)

“The main argument for all these great professors was to say, ‘You are working in a facility that is well equipped with equipment, staff and material, but presently where do children go to seek care?’ Not necessarily in town.” *(NIG-2012-8-2, international consultant)*

Second, Nigerien actors in particular paid attention to operational details in child health programming, a fact that was especially evident during direct observation of policy-making forums, which included much discussion of motorcycles, bicycles, donkeys and carts, specifics about how censuses and data collection would operate, and different incentives for health workers and other operational actors. Lower-level health workers, those most familiar with operational details, were often represented at policy forums but rarely spoke up, perhaps intimidated by the dense scientific presentations that usually preceded question-and-answer periods – meaning that their stores of practical knowledge and experience were rarely

tapped to inform the policy making process. Typical was this interaction at a workshop on iCCM for newborns: a presiding officer, noting “quite the army of pediatricians and gynecologists who have spoken up till now,” called upon the community health workers (CHWs) present to comment; after one mumbled a few words, a member of the audience prompted, “What did you think of the project?” “Well, there were a lot of problems related to post-natal care and delivery, but we also saw a lot of progress,” he responded, and the discussion moved on. Finally it bears noting that such discussions of operational details during policy forums are rarely documented or recorded in writing and, in this case study at least, were an almost purely oral form of knowledge.

Third, a pilot test was considered by all actors (and especially Nigerien ones) to be an essential step to demonstrating the feasibility of iCCM in the Nigerien context – yet its function was less about the formal creation of knowledge (no official evaluation was undertaken) than about a practical testing of the concept. MOH, in consultation with AWARE, WHO and UNICEF conducted a pilot test in 2006-07 with two cadres of health workers, CHWs and community volunteers (*relais communautaires*), in Madarounfa health district. Following the pilot’s evaluation in early 2007, Ministry authorities decided to scale up iCCM using only CHWs, a cadre that was already integrated into the health system, more or less forcing international partners to follow, as they were reluctant or unwilling to support a program that would be in conflict with existing legal and regulatory norms. This marriage of policy and context that would ultimately prove key to iCCM’s success (Dalglish, Surkan et al. 2015).

Generally speaking, pilot projects tested only a limited number of child survival interventions in Niger, principally those that international agencies were willing to finance. Indeed donors

sometimes used pilot projects as a tool to convince national stakeholders to adopt policies and programs, a fact government officials were not unaware of:

“Because people say ‘yes, in India it happened, yes in Ethiopia it happened, in Rwanda it happened, that is OK; but in our country, how can we avoid things getting out of control?’ That is why for the KFPs [Key Family Practices] we preferred a pattern with which it will be said that ‘this is being implemented by people living in Niger, when you try it, it works’.” (NIG-2012-6-16, *senior manager, multi-lateral agency*)

“[Ideas for pilot projects come] from the higher level, either from Unicef which is our major partner or from any other partner who is willing to invest in one area, in child health, in newborn health ... They get in touch with us or with our leaders, and then things land here... Decisions are not made here, but we are the actors.” (NIG-2012-7-11-2, *IMCI officer, government sector*)

Fourth and finally, elements of the Nigerien historical context were taken into account during policy processes mainly in informal ways. Niger was an early leader in community health programming, and for more than two decades beginning in the mid-1970s deployed a small army of *secouristes-hygiénistes* (first aid workers), who dispensed chloroquine for malaria and other basic medicines. Respondents in our study were well aware of the *secouristes*; however, their ability to gain practical wisdom from this experience was hampered a lack of any formal evaluation of the program, making it difficult to learn lessons from the past. Respondents provided a multitude of reasons to explain its ultimate failure, including lack of incentives for first-aid workers (NIG-2012-6-8-1, NIG-2012-5-30); the absence of monitoring and supervision (NIG-2012-7-3-3); difficulties in replenishing drugs stocks (NIG-2012-6-8-2); changes in the health system with the introduction of health posts; and lastly, the poor

performance of first-aid workers (NIG-2012- 7-3-1, NIG-2012-7-26), which are not mutually exclusive. However, as one said, the lack of substantive documentation effectively consigned the experiment to “the dustbin of history” (NIG-2012-7-3-1, *direct observation, workshop on home malaria care*).

6.6 Discussion

In the iCCM policy making process in Niger, government and international actors drew on diverse types of knowledge and evidence to design and enact a policy that would measurably reduce the number of child deaths in Niger. An Aristolian conception of knowledge brings forth ways in which actors’ knowledge and practice worked inseparably to bring iCCM, a policy created at the global level, into the Nigerien health system. Beginning with codified knowledge (the *episteme*), the production, analysis and communication of articles in the scientific literature was undertaken primarily by external actors, including those at bilateral and multi-lateral agencies; Nigerien actors nonetheless drew on trends from the scientific literature and international guidelines and distilled them through data and statistics on Niger to adapt iCCM to the local context. The technical skills (*techné*) needed to translate knowledge into policy were also unevenly distributed, with Nigerien government offices severely limited in human resources, whereas international agencies were comparatively awash with qualified personnel; however, Nigerien government actors possessed capabilities allowing them to grasp currents in the scientific literature, assess their pertinence to Niger, and furthermore navigate a complex policy environment to build support, adopt and implement iCCM. The practical wisdom (*phronesis*) of both Nigerien and international actors was essential to iCCM’s success, and included ethical or philosophical appeals regarding the need for task-shifting, an attention to operational details, and an insistence on linking iCCM

policy with an already-institutionalized cadre of health workers (CHWs) in a decision that would prove key to iCCM's success.

The Nigerien experience with iCCM is relevant because it is a case in which an evidence-based policy created at the global level was successfully adapted, adopted and implemented in a low-income, low-capacity setting, with measurable success. Evaluations of iCCM have generally shown good quality of care in health huts (Seidou 2008; Bensaid and Gali 2009); more importantly, estimations using the Lives Saved Tool (LiST) found iCCM and surrounding policies to have contributed nearly a quarter of Niger's 43% reduction in child mortality between 1998 and 2009 (Amouzou, Habi et al. 2012). In this way, the case of iCCM in Niger represents the promise of evidence-based policies, fulfilled when they are properly adapted to country contexts and implemented by competent authorities and operational actors.

Nonetheless, this success should not prevent us from problematizing research utilization and knowledge translation processes, the more so since the Nigerien case reflects aspects of policy environments that are typical or common in LMICs but more rarely found in high-income countries. For example, the policy environment in Niger was characterized by limited human resources at government agencies, coupled with greater numbers of staff and higher capacity at international agencies, at least in the area of child health. Taken together, policy actors from WHO, Unicef, USAID, the West African Health Organization and others often outclassed – the word choice is deliberate – Nigerien government actors in terms of education, training, English language skills and other technical skills, a fact due in no small part to the fact that the most talented Nigerien technical staff sought positions in international agencies for understandable professional and practical reasons. Personnel at

these agencies also had vastly superior access to the scientific literature, allowing them to dominate interpretations of codified forms of knowledge. Nigerien actors accepted this, quite likely because of numerous competing priorities coupled with limited time and resources. This may explain the seeming passivity that some Nigerien respondents expressed with respect to interpretations of codified forms of knowledge and high regard for WHO's technical advice, as has been observed in other studies in sub-Saharan countries (Cruz and Walt 2013). While these conditions may not be found in all health policy environments in sub-Saharan Africa or LMICs (and certainly not in research powerhouses such as India, China, Kenya, South Africa, and so on), no comparable situation is found in high-income countries, where research on knowledge translation and research utilization has typically taken place.

A critical take on the iCCM policy-making process in Niger brings us to highlight sources of power within the knowledge translation process, one of which was medical training and clinical knowledge, as when pediatricians blocked and then finally allowed the treatment of pneumonia by CHWs following logical and ethical arguments about the need for iCCM as a way to reach more children in need. Among Nigerien government policy actors, a substantial number were clinicians and indeed medical professionals are a policy elite that traditionally has exercised significant power in health policy thanks to their special knowledge and authority, legally granted occupational monopoly, top position in health, and cultural authority (Clark 2014). In Australia, for example, a network analysis found medical professionals to form a cohesive and central sub-network, lending them pervasive influence on policy despite decades of efforts to reduce medicine's place in policy making and the recognition that many (non-medical) forms of knowledge (including social science research, health systems and policy research, etc.) are both useful and necessary to making good health

policies (Lewis 2006). In the Nigerien case, we might note that while there is a strong body of qualitative and socio-anthropological research on the Nigerien health system, including as it relates to child health, much of it in French, these types of studies do not appear to have had any impact on iCCM policy making processes despite their relevance to understanding historical policy precedents, current health system challenges, and care seeking behaviors (Kafando, Mazou et al. 2011; Körling 2011; Ousseini 2011; Oumarou 2013).

At this point it is useful to pause and put these results into context, in terms of the determinants of policy choices beyond research, evidence and knowledge – even “knowledge” broadly defined. The adoption of iCCM in Niger was an intensely political process, pursued by political actors driven by structural dynamics related to Nigerien forms of governance and economic (re-) distribution and the agendas of external actors (Dalglish, Surkan et al. 2015). This leaves us to wonder whether political skills are not properly considered a form of knowledge in the policy-making process – not knowledge to be translated, but knowledge of *how to translate*, a nuance hearkening back to the Aristotelian refusal to separate knowledge and practice. For the purposes of the present analysis, we decided it lay outside our scope – a decision that might be criticized (and perhaps rightly) as unduly technocratic by analysts arguing that “policy is political; our ideas about knowledge translation must be too” (Morgan-Trimmer 2014). Indeed, while the evidence-based policy paradigm is influential in high-income countries as well, some analysts have pointed out that policy decisions in Western countries are often openly political, whereas stronger forms of the “evidence-based policy” paradigm (particularly as they relate to evidence from randomized trials) are more exclusively associated with the global South (Deeming 2013). At the same time, theoretical categories of knowledge for policy-making must not become so broad as to be unwieldy and lose meaning – and policy actors and political actors represent

distinct if connected classes. Further reflection and discussion on these points is no doubt needed.

Our study has some limitations. Some targeted stakeholders, particularly high officials, were unable to be interviewed; a few key documents were also unavailable due to the destruction of WHO-Niger servers by fire in 2007. As in any qualitative study, respondents may have sought to portray events strategically, which we sought to mitigate by triangulating between respondents and other data sources. Finally and importantly, this research was financed and in large part carried out by researchers from Western institutions, and thus necessarily reflects an outside perspective on the events it seeks to describe. We have attempted to mitigate this bias and enhance validity in a number of ways, including by keeping “reflexivity” memos on investigators’ underlying values and possible sources of bias, “member checking” (we presented preliminary results at a workshop in Niamey in October 2012), discussions of our analysis with local researchers, and extending our critical reflection to ourselves (Creswell 2007).

Processes of research utilization and knowledge translation have primarily been studied from the standpoint of Western countries despite the fact that the most pressing health policy needs, as measured by the burden of disease, are located in LMICs. Furthermore, analyses of evidence-based policy making continue to rely on theoretical frameworks arising from objectivist and frequently biomedical paradigms related to concept’s origins as an outgrowth of evidence-based medicine (Behague, Tawiah et al. 2009). This study demonstrates the utility of addressing these two deficiencies in the literature in tandem, including new cases to expand theoretical categories. Furthermore, the importance of a critical perspective, encompassing sources of power in financial resources, professional authority, and technical

skill, among others, emerges as a central concern. Both researchers and policymakers in LMICs should consciously account for the diverse and multiple types of knowledge available for developing health policy in LMICs and take a more active and critical perspective to applying these to pressing health problems.

Chapter 7. Conclusions

7.1 Summary of results

Results for each paper are highlighted in Chapters 5-7. Taken as a whole, this study elucidates forces at work in global and national health policy processes, showing how the transformation of knowledge and research evidence into policy is conditioned by broader social forces, including the preexisting (geo-) political order, international and domestic resource flows, historical precedents and social trends and interactions amongst policy-makers and members of the society at large. Power, a difficult but important concept in health policy making, emerged as an important factor at all levels, whether arising from professional authority, political control, or access to economic resources. The role of power is especially important in this case study of iCCM, a pro-poor policy whose benefits target politically disenfranchised, socially isolated populations and geographically far-flung populations. During policy making at the global level, the poor were the focus for not-quite-technical reasons: reducing child mortality rates in the poorest subsets of the population were a necessary pathway to reaching the policy objective, namely the child survival MDG. At the national level in Niger, the poor benefited from governance mechanisms linking political longevity to a sort of national stewardship by Tandja, the “Father-Chief,” as well as timely and consequential influxes of funds – and the aforementioned technical expertise.

Beyond this, this study illuminated aspects of theory that may be useful for explaining health policy processes in LMICs. In terms of the use of evidence, this dissertation puts another nail in the coffin of “rational” theories of the use of evidence in policy-making, especially as it concerns policy making at the national level. While the research literature was a key focus of policy makers in the more technocratic spheres of global policy-making, wherein experts actually got into shouting matches about the weight of the scientific evidence, this was hardly

the case at the national level in Niger, where Ministry officials accepted interpretations of the evidence provided by international actors and where many major policy decisions were made with exactly zero input from government health policy actors, including major decisions about the structure and functioning of the health system.

This research joins a growing body of literature on policy analyses in LMICs; however it may also have relevance for social epidemiology, a field that explores how societal structures and dynamics degrade or enhance population health. Social epidemiologists' focus on "upstream" (more distal) causes of disease hearken back to public health's founding principles (Vichrow et al.), and indeed it is a continual theme in public health to criticize the "short-term nature and ultimate futility of ... downstream endeavors" (McKinlay 1979). In an influential 1995 article, Link and Phelan argued for understanding social conditions as "fundamental causes of disease," which affect "multiple disease outcomes through multiple mechanisms" (Link and Phelan 1995). These "social conditions" as conceptualized by Link and Phelan encompass material deprivation as well as social inequalities, and researchers in intervening years have proposed a number of mechanisms by which these conditions could affect health, including epigenetic pathways related to social surroundings, psychosocial stress, and Durkheimian social cohesion models. To this list, this dissertation proposes *policy* as a mechanism for political economy and other upstream factors to act on health.

7.2 Strengths and limitations

Strengths and limitations for each paper are included in Chapters 5-7. A major strength of this dissertation is its use of in-depth contextual analysis related to the main study site, Niger, relying on extensive consultation of documents on the country's history, political system, economic situation, relationship with other countries and position in the international order,

as well as socio-anthropological research on the country's health system, bureaucratic and political culture, and governance structures. Other strengths of this dissertation include its strong theoretical basis, founded on concepts and theories from within the public health and public policy literature, alongside more philosophical readings on the nature of power and knowledge.

One major limitation of this dissertation is the fact that data collection occurred as part of a multi-country study on iCCM, meaning that study questions and research instruments were designed for the purposes of the overall study and not specifically for this dissertation. To ensure the validity of the present work, I chose research questions that could be addressed using available data, adding additional sources (notably contextual data) and selecting analysis methods capable of culling appropriate evidence from the document review and interview data. Nonetheless, it would have been fruitful to consider including other data collection methods relevant for further elucidating the more “hidden” aspects of power dynamics (such as discourse analysis, although this might be challenging in French for a non-native speaker), as well as providing more granular information on actors' policy choices and implied tradeoffs, for example using discrete choice experiments.

7.3 Recommendations for future research

Given the early stage of development of the health policy research in LMICs and to a lesser extent at the global level, many avenues for future research remain, and several recommendations for future research have been listed in Chapters 4-6. A number of previous observers have called for increasing attention to the ways in which power shapes and determines health policy processes; however, this dissertation provides an appreciation for the difficulty of applying such a profound, multi-faceted and contested theoretical

concept. From my experience writing this dissertation, I would argue that the need in the literature is currently less for empirical studies of power in policy-making, but rather for primary theoretical reflection to guide subsequent inquiry.

Like other studies, this dissertation demonstrated the extent to which specific country context determines policy outcomes. We attempted to provide an in-depth explanation of why Niger was the first and remains one of the only countries to have adopted and implemented iCCM. Given the time it takes to assemble even a reasonable familiarity with a country context, one way forward seems to be in collaborations between researchers interested in studying the same questions. For example, these could be linked under the “Power” cluster of the Health Systems Global group of researchers, who blog on health systems issues including research utilization, policy and implementation, and who gather under the aegis of thematic working groups on relevant issues such as social science research on health systems issues and translating evidence into action.

In terms of my personal goals for future research, I would like to continue to build upon my acquired expertise in Niger and the Sahel region, and collaborate with the talented Nigerien researchers whom I’ve had the privilege to meet and work with. As one of the world’s poorest, most aid-dependent states, Niger offers possibilities for understanding mechanisms of policy development in situations of limited autonomy in terms of national policy-makers. It also suffers from major health challenges, with among the world’s highest rates of fertility, child mortality, malnutrition, and a number of infectious diseases. At the same time, Niger is, for the time being, a (relatively) safe and stable place to conduct research. I hope I have more contributions to make on health policy and related topics in Niger.

Lastly, this dissertation did not take a position on the appropriateness of existing policy development mechanisms – including the large role international actors play in setting national policy – though normative discussions on this topic are no doubt warranted. Indeed, further work on this topic should arguably be not merely descriptive but prescriptive: given the very high stakes, researchers should be permitted to have – and share – opinions on their findings in appropriate forums. Public health is a discipline founded on notions of justice, equity and the search for the “good society” – policy is a crucial mechanism toward reaching these goals, and researchers should not be afraid to interpret the facts in a way that advocates for the health of the poor and the greater good.

Chapter 7. References

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Chapter 8. Appendices

8.1 Global study

8.1.1 Interview guide

Policy Analysis of Integrated Community Case Management for Childhood Illnesses – Global Policy-making

Semi-structured interview guide

The aim of this study is to understand how and why the policy known as Integrated Community Case Management of childhood illness (iCCM) developed at the global policy-making level. We would like to understand how different factors affect this process, such as actors, institutions, ideas, context and policy content. We are also interested in how ideas and evidence were used by global policy actors and diffused within the policy community. This research is part of a broader study of iCCM policy, which also looks at national iCCM policies in six countries in sub-Saharan Africa. We hope you will help us understand how iCCM was created in the international health policy arena and how it was promoted or diffused to countries in sub-Saharan Africa.

***** REQUEST ORAL INFORMED CONSENT *****

DEMOGRAPHICS: TAKE NOTES (identifying information to be kept separate from interview transcripts)

a. Participant's name & organization and email/ contact details (fill in beforehand if possible):

b. Participant's title:

REQUEST TO TURN ON RECORDER

c. What are your primary responsibilities in this position?

➔ What year did you start in this organization? What year did you start in this position? Where were working before this organization?

d. Over what period of time were you most involved in the development of iCCM policy?

Questions

1. What is your understanding of the definition of iCCM for child health?

- What services does iCCM include? [PROBE: on malaria, diarrhea, pneumonia]
- What kind of health workers are meant to provide iCCM services?

2. What are the origins of iCCM policy at the global level?

- How did iCCM build on previous health programs? [PROBE on IMCI, C-IMCI, home management of malaria and pneumonia, community-level care for malnutrition, etc.]
- iCCM could perhaps be seen as closely related to C-IMCI; why was it given a different name?
- How is the content of iCCM policy different from other similar policies related to community case management?
- What was the rationale for these different policies or programs?
- iCCM could be seen as a largely curative care package (for example it does not include bednets, handwashing/ sanitation, breastfeeding, rotavirus vaccine, malnutrition). Why do you think it evolved in this way?
- Do you think global policy-makers see iCCM as being connected to approaches in prevention? Why or why not?

- Was community case management for some pathologies better accepted than for others? How accepted were CCM for malaria, diarrhea, and pneumonia, respectively?

3. How did iCCM policy at the global level **develop over time?**

- What events or milestones were critical in the formulation of iCCM policies/programs? [PROBE on specific meetings, conferences, events, etc.]
- What documents do you view to be the key expressions of iCCM policy at the global level?
- During the formulation of iCCM policy, was anything different or unusual compared to how policies and programs are normally developed?
- How has iCCM policy impacted other existing policies, guidelines or recommendations at the global level? [PROBE: contracting NGOs, human resources for health, drug regulation]
- How open and consultative was the process for developing iCCM policy?

4. What actors were involved in the discussions to formulate global iCCM policy?

- Which offices/agencies/departments or individuals participated in the formulation of iCCM and related policies? What were their roles?
- Who led the process for formulating policies about iCCM policy?
- Which actors were most supportive of iCCM policies? Which actors opposed the development of the iCCM?

- Did a small number of actors dominate discussions or were there are large number of voices involved?
- How did actors get involved in iCCM policy? Why did they become involved?
- How did actors' positions vary according to different components of iCCM? [PROBE on malaria, diarrhea, pneumonia] How did these positions on iCCM policy change over time?
- Which actors had the most expertise or scientific knowledge about iCCM policy?

5. What has been the nature of actors' interactions around global iCCM policy?

- In what contexts did actors interact with each other over iCCM policy?
- Which actors have forged strong alliances and which did not? Did they have a history of working together?
- Which actors were in opposition to each other? What were the main points of disagreement?
- How have these relationships between actors shifted over time?
- Which actors involved in the development of iCCM policy do you think were the most powerful? In your opinion, what made them powerful?

6. What was the role of ideas and evidence in creating iCCM policy?

- How did you learn about ideas or evidence related to iCCM?

- What were the main ideas or principles motivating the creation of iCCM policy? [PROBE for tacit knowledge, values, ideas, administrative/health service data, research, past international guidelines or recommendations, etc.]
- How has this information influenced the content of iCCM policy?
- Were there any differences in the evidence available for the different components of iCCM? [PROBE on malaria, diarrhea, pneumonia]
- What specific sources (articles, reports) do you remember being important or influential, and how?
- Were there disagreements about what the scientific evidence said?
- How did actors introduce this information into the process?
- Which actors were most likely to use scientific evidence during policy discussions on iCCM? How did other actors react to this?
- Did policy-makers share evidence with each other? If so, how?
- How important were ideas and evidence compared to other factors in the policy process?

7. How was iCCM policy diffused between the global, regional and national levels?

- What kinds of interactions were global level policy actors having with regional and national actors around iCCM?

- What strategies did global-level actors use to share policy ideas around iCCM with regional and national-level actors? How successful were these strategies?
- In what other ways were global policy ideas on iCCM transmitted to different policy communities and levels of policy-makers?
- What efforts were made to “market” iCCM to countries?
- What types of funding did global policy actors offer to engage other stakeholders regarding the adoption and implementation of iCCM? What other incentives were proposed around iCCM? [PROBE for technical assistance, aid in writing policies, etc.]
- How were understandings of iCCM modified as the policy diffused across the global, regional and national levels?
- What factors do you think affected whether or not countries decided to adopt and/or implement iCCM? To what extent are policies that are promoted by international agencies accepted by in-country governments? For iCCM specifically and more generally?
- Are countries aware of their neighbors’ health policies and does this influence their policy decisions?

8. What kind of **funding have donors made available** to support iCCM activities at the country level?

- Has this changed over time? [PROBE for differences between malaria, diarrhea, pneumonia and newborn]
- To what extent did funding availability impact the formulation of the iCCM policy at the global level and at the country level?
- What collaboration was there between potential sources of funding for formulating and implementing iCCM at the country level?
- What are the longer term plans for financially sustaining iCCM programming in countries? Who is thinking about these issues?

9. Is there anything else significant about the development of iCCM policy that we have not discussed so far? Is there anything else you would like to add?

ASK FOR RELEVANT DOCUMENTS AND NAMES OF OTHER POTENTIAL RESPONDENTS

Thank you for participating in this study. Your responses will be very helpful to our understanding of how iCCM policy for childhood illness developed.

8.1.2 Codebook for qualitative analysis

Global iCCM Policy Analysis: Codebook

Version of August 28, 2013 [SD, SB, AG, JS]

Origins & content

<i>Definition</i>	Definition of iCCM according to the respondent or a source cited by the respondent.
<i>CHW profile for iCCM</i>	Characteristics of different community health workers delivering iCCM services and their role in delivery. Issues around relationships with other health workers, supervision and training for iCCM services, distribution of supplies, etc.
<i>Origins</i>	Describes ideas, policies, scientific currents, and events that relate to the beginnings or origins of iCCM policy.
<i>Rationale</i>	Justification for iCCM as a policy; reasons why it is an effective or appropriate strategy.
<i>Integration</i>	Includes all discussion of how and why iCCM evolved as an integrated policy with respect to the pathologies included. Also refers to disparities in the acceptance of the pathologies included in iCCM by various stakeholders, the timing of their inclusion, etc.

Process

<i>Timeline</i>	Evolution of different iCCM policy components, or events relevant to iCCM, including when iCCM started gaining traction at the global level.
<i>Issue identification</i>	Includes descriptions of the problems or issues iCCM is meant to address, how these evolved identification has evolved over time, and how iCCM came to be discussed as a policy option.
<i>Formulation of iCCM</i>	Description about how iCCM policy was formulated, including how typical the iCCM process was compared to other policy formulation processes, and how fast or slowly it has been formulated.
<i>Events</i>	Landmark or critical events at the international or regional levels that influenced the formulation of iCCM policy, including meetings, conferences, and discussions. Can be formal or informal events.

Context

<i>Overall context</i>	The influence of political, social, historical, and technological factors on the development of iCCM policy.
<i>Related policies</i>	Includes any discussion of similar or related child health policies. May include other CCM, HMM, nutrition, and prevention strategies, as well as CHW policy and non-child health policies that are also relevant. Also includes iCCM's influence on the development or form of these policy instruments and how they may conflict with iCCM.
<i>IMCI</i>	Includes mentions of IMCI and C-IMCI as pre-cursor policies, as other interventions occupying the same policy space, their

relationship to iCCM, etc.

Actors

<i>UN system</i>	Includes actors and organizations within the U.N. system, such as WHO, Unicef, UNFPA, and WFP, involved the formulation of iCCM policy. Also includes sub-offices or departments within these organizations (e.g. CAH in WHO, etc.).
<i>Other multi-lateral organizations</i>	May include the World Bank, EU, and other multi-laterals involved in the formulation of iCCM policy.
<i>Bi-lateral organizations</i>	Includes USAID, CIDA, and any other bi-lateral aid organizations involved in iCCM. Also includes sub-offices or departments within these organizations (e.g. MCHIP, etc.)
<i>NGOs</i>	Includes non-governmental organizations that played a role in developing iCCM policy, operating either independently or as a coalition (e.g. CORE Group, Save the Children).
<i>Academic</i>	Includes researchers, academics, think tanks, and other academic actors or organizations that contributed to formulating iCCM policy.
<i>Country-level actors</i>	Actors or organizations working at the country level, but involved in global or regional-level iCCM policy-making or diffusion. This code may coincide with other actor categories (e.g. UN agencies and NGOS).
<i>Miscellaneous actors</i>	Other actors and organizations not listed under other Actor categories, including foundations (e.g. BMGF), consultants, advocacy groups, etc.
<i>Formalized partnerships</i>	May include the iCCM Task Force, the Catalytic Initiative, and other temporary or permanent partnerships bringing together multiple actors or organizations on iCCM.

Relationships & interactions

<i>Participation / consultation</i>	Description of the nature of the policy formulation process for iCCM and how the process hindered or enabled participation. Includes discussions about openness, transparency, consultation and stakeholder involvement. Also includes descriptions of the lack of participation and/or consultation, for example with different policy communities.
<i>Alliances / coalitions</i>	Description of (informal) alliances between actors, including whether actors have a history of working together, and whether alliances have shifted over time. Also includes coordination within agencies (e.g. CAH and RBM). Formal alliances are covered under Actors / “Formalized partnerships.”
<i>Personal relationships</i>	Includes mentions of ongoing personal relationships, either inside or outside the professional sphere, and how these influenced the development of iCCM.
<i>Leadership</i>	Examples of actors and institutions leading the process of developing iCCM policy and in policy diffusion. Includes persons who played key leadership roles in moving the policy forward, as well as specific instances of leadership. May also include instances of a lack of leadership or an unfulfilled need for leadership.
<i>Power</i>	Relative power and influence of different actors, including reasons

	for why actors are/are not powerful, different sources of power (e.g. funding, political power, administrative position), and how power was used by actors in policy process.
<i>Coercion/conditionality</i>	Instances of one party (actor or organization) using its leverage to impose its own viewpoint, obtain concessions or impose conditions related to choices during iCCM policy formulation.

Evidence

Types of evidence

- | | |
|---|---|
| - <i>Scientific research & data</i> | Scientific research and data that have played a role in the development of iCCM policy, including research evidence, surveillance data, scientific articles, operational research, and meta-analyses etc. |
| - <i>Field reports</i> | Specific examples of in-country CCM pilots, projects or programs that influenced the development of iCCM policy. These may be published or unpublished. |
| - <i>Tacit knowledge</i> | The role of tacit knowledge, experience, personal beliefs, values and other, non-scientific sources of evidence in the development of iCCM policy. (E.g my work at the district level taught me...) |
| - <i>Norms, values, principles</i> | Refers to any ideas based on moral or ethical judgments or philosophical reasoning rather than scientific data. May include how these ideas become rationalized and how they influenced how policy-makers conceptualize iCCM. |
| - <i>Specific documents</i> | Used to code the mention of specific articles or documents that were influential in iCCM policy. |
| - <i>Pilot projects</i> | Any mentions of pilot projects. |

Evidence use

Descriptions of how evidence is/was used and which actors have used evidence in the discussions about iCCM policy, including promoting or arguing against the inclusion of specific aspects of iCCM. Also includes descriptions of how the use of evidence concretely influenced choices related to iCCM content or implementation, as well as when evidence was ignored or not taken into account.

Introduction of evidence

How evidence was introduced to discussions on and related to iCCM, including the type of evidence and actor it was introduced by. Describes parties (actors and organizations) that were most active in introducing evidence into debates on iCCM and framing and interpreting that evidence. Also includes the creation of new evidence, e.g. commissioning studies.

Framing

How actors have consciously framed the thinking around the problems that iCCM addresses and the potential solutions. Includes both internal framing (within a group of actors) and external framing (outward to other stakeholders).

Lack of evidence

Discussions of instances where there was insufficient scientific evidence to justify certain policies, decisions or viewpoints. This lack of evidence may be real or perceived.

Diffusion of iCCM

Interactions with regional and national actors

Interactions of global-level policy-makers with regional or country-level policy makers, and how iCCM was introduced at sub-global levels. This refers to interactions specifically aimed at

	introducing iCCM to sub-global levels.
<i>Strategies to diffuse</i>	Examples of specific strategies used by global-level policy-makers to diffuse iCCM to regional and country levels. May include holding regional workshops, meetings, the creation of implementation documents, the presentation of supporting evidence, etc. Also refers to inducements or incentives offered for regional or country-level actors to adopt iCCM policy, such as offers of funding, technical assistance, aid in writing policies, etc.
<i>Adaptations</i>	Includes any modifications, either formal or informal, of iCCM policy as it moved from global to regional or country levels.
<i>Country responses</i>	Describes contextual, procedural, or other factors making it more or less likely for countries to adopt (or reject) iCCM. This may include the existence of specific implementation tools, whether neighboring countries have adopted iCCM, or offers of technical or financial support.
<i>Financing & implementation</i>	
<i>Overall financing issues</i>	Current issues around financing iCCM, and types of funding and the sources currently available.
<i>Implementation</i>	Overall impressions or observations about the extent of iCCM implementation, including actors and institutions that are responsible for implementation. Also includes futures plans for implementation of iCCM.
<i>Other</i>	
<i>Biographical information</i>	Any biographical information about the career history or personal involvement in iCCM mentioned by the interviewee.
<i>Malaria</i>	Applied to any discussion of malaria as a distinct CCM component, the place of malaria care within iCCM, and how malaria-related considerations influenced the development of iCCM.
<i>Diarrhea</i>	Applied to any discussion of diarrhea as a distinct CCM component, the place of diarrhea care within iCCM, and how diarrhea-related considerations influenced the development of iCCM.
<i>Pneumonia</i>	Applied to any discussion of pneumonia as a distinct CCM component, the place of pneumonia care within iCCM, and how pneumonia-related considerations influenced the development of iCCM.
<i>Nutrition</i>	Any discussion of nutrition and related issues, either as a CCM component or as a related policy, including discussions of whether or not to include nutrition in iCCM.
<i>Newborn</i>	Any discussion of newborn care and related issues, either as a CCM component or as a related policy, including discussions of whether or not to include newborn care in iCCM.

8.2 Niger study

8.2.1 Interview guide

L'ANALYSE DE LA POLITIQUE DE LA PRISE EN CHARGE INTEGREE DES MALADIES DE L'ENFANT AU NIVEAU COMMUNAUTAIRE

GUIDE D'ENTRETIEN SEMI- STRUCTURE

INTRODUCTION

Cette étude a pour but de comprendre comment et pourquoi la politique de prise en charge intégrée des maladies de l'enfant au niveau communautaire (PCIME-C) s'est développée au Niger. En particulier, nous voudrions savoir comment les différents acteurs, institutions, et idées, ainsi que le contenu de cette politique, ont influé sur les processus d'élaboration.

Dans le cadre de cette étude sur la PCIME-C, nous nous focaliserons sur : (i) le traitement de la pneumonie de l'enfance (avec des antibiotiques), (ii) le traitement de la diarrhée (avec du zinc et des sels de réhydratation orale), (iii) le traitement du paludisme (avec les CTA – combinaisons thérapeutique à base d'artémisinine – et d'autres antipaludiques), et (iv) le traitement de la septicémie néonatale (avec des antibiotiques). Ces soins sont généralement pris en charge par les agents de santé communautaires (ASC) au sein des ménages et/ou dans la communauté.

DEMANDER LE FORMULAIRE DE CONSENTEMENT : Nous allons enregistrer cette entrevue par le moyen d'un enregistreur et aussi prendre des notes au cours de l'entretien. Vos réponses aux différentes questions, les notes prises lors de l'entretien et l'enregistrement audio resteront confidentiels et anonymes. Vous n'êtes pas tenu de répondre à des questions qui vous mettent mal à l'aise. Vous pouvez aussi demander à mettre fin à l'entrevue à n'importe quel moment.

DONNEES DEMOGRAPHIQUES (A noter séparément sur une feuille)

- e. Nom du répondant, structure et adresses (email, téléphone) ;
- f. Titre et Poste du répondant et responsabilité principales,
- g. Depuis quand travaillez-vous au sein de cette structure ? _____ ans _____ mois
- h. Depuis combien de temps êtes-vous à ce poste ? _____ ans _____ mois
- i. Ou avez-vous travaillé avant d'être au sein de cette structure ?

ENQUETUER : DEMANDEZ L'AUTORISATION de METTRE EN MARCHE L'ENREGISTREUR NUMERIQUE

QUESTIONS

1. Pouvez-vous décrire la stratégie nationale de PCIME-C au Niger?

- Quels sont les services (soins) qui sont concernés par la politique ? [SONDEZ : le paludisme, la diarrhée, la pneumonie, les soins aux nouveau-nés].
- Dans quelle mesure, la stratégie nationale est-elle une politique intégrée? Et comment? (politique, formation, monitoring, mise en œuvre, etc.)
- Y a-t-il d'autres politiques de prise en charge communautaire des maladies infantiles et néonatales qui existent ou qui ont existé au Niger ? (prise en charge à domicile du paludisme, campagnes de vaccination ...) Comment la PCIME-C est-elle différente de ces programmes ?
- Pouvez-vous décrire les agents qui offrent ces services (soins) aux enfants et nouveau-nés au sein de la communauté ? Quel est leur profil? (formation, sélection, motivation, rémunération)

10. Quelle est l'historique du traitement des maladies de l'enfance au niveau communautaire au Niger ?

- Qu'est-ce qui a motivé la création de ces différents politiques et programmes? (manque de personnel sanitaire, survie de l'enfant, OMD, accès aux services de santé)
- Concernant le traitement des différentes maladies de l'enfance, y a-t-il eu des phases différentes de mise en œuvre de programmes de prise en charge au niveau communautaire? Par exemple, est-ce que le traitement du paludisme au sein de la communauté a connu une évolution rapide par rapport au traitement de la pneumonie?
- Quelle est la part de la prise en charge communautaire des nouveau-nés au sein dans cette historique?
- Quelle est l'historique des agents de santé communautaires ou des relais communautaires dans la prise en charge des maladies de l'enfance au niveau communautaire ?

11. Comment est-ce que la politique de PCIME-C a été élaborée ?

- Quelles étaient les phases déterminantes (cruciales) dans l'élaboration de la politique ? [SONDEZ : les différences entre le palu, la diarrhée, la pneumonie, les soins aux nouveau-nés au niveau national et international]
- Qu'est-ce qu'il y a eu de particulier dans l'élaboration de cette politique par rapport aux autres politiques et programmes de santé au Niger ?
- Est-ce qu'il était nécessaire de modifier des lois, des réglementations, ou d'autres politiques afin de mettre en place la PCIME-C ?
- Comment la PCIME-C a-t-elle influé sur les autres politiques existantes (ONGs partenaires, personnel sanitaire, loi de régulation sur médicaments)?

12. Qui étaient les acteurs les plus impliqués dans les discussions et les débats au moment de l'élaboration de la politique de la PCIME-C ?

- Quelles sont les structures du Ministère de la Santé Publique qui étaient les plus impliquées dans l'élaboration de la politique de PCIME-C ?
- Qui a dirigé le processus d'élaboration de la politique ?
- Quels autres acteurs ont été impliqués dans le processus d'élaboration en dehors du MSP ? A quel moment ont-ils rejoint ce processus?
- Ce processus était-il inclusif et participatif, ou plutôt fermé et dirigé d'en haut ?
- Quel acteur a joué le plus grand rôle dans l'élaboration de cette politique?
- Quels acteurs s'opposaient à la PCIME-C ou voulaient ralentir le processus d'élaboration ?
- Y avaient-ils des acteurs qui étaient plus en faveur de certaines composantes de la PCIME-C que d'autres ? Par exemple les soins aux nouveau-nés, par rapport au paludisme, aux diarrhées, et aux pneumonies.
- Parmi les acteurs impliqués dans ce processus, selon vous, qui étaient les plus puissants ? Selon vous, qu'est-ce qui les a rendu puissants?

13. Quelles étaient les modalités de travail entre les différents acteurs travaillant sur la politique de PCIME-C ?

- Dans ce processus, quels acteurs ont créé des alliances ? Quels acteurs ne faisaient pas partie de telles alliances ?
- Ces acteurs avaient-ils déjà travaillé ensemble auparavant ?
- Quels acteurs s'opposaient à quels autres acteurs ?
- Comment est-ce que ces relations de travail ont-ils évolué au cours du processus ?

14. Quelles informations ou évidences ont influé sur la formulation et l'élaboration de la politique de PCIME-C ?

- SONDER: savoir tacite, idées, données administratives ou sur la santé, études internationales ou locales, orientations/recommandations internationales, expériences des autres pays ...
- Comment ces informations ont-elles influé sur le contenu de la politique? [SONDER : différences entre paludisme, pneumonie, diarrhée, soins aux nouveau-nés.]
- Quel type d'information a joué le plus grand rôle lors des discussions? Comment cette information a été introduite dans le processus?
 - Quelle a été l'importance des normes/directives internationales de l'UNICEF ou OMS?
 - Quelle a été l'importance des projets de prise en charge communautaire des maladies de l'enfance dans d'autres pays?
 - Comment avez-vous pris connaissance de ces informations ?
- Dans le processus d'élaboration, quelle a été l'importance de ces informations comparativement à d'autres facteurs?

15. Pouvez-vous décrire la situation de la mise en œuvre de la PCIME-C au Niger ?

- Quels ont été les obstacles majeurs à sa mise en œuvre ? [SONDER : différences entre palu, pneumonie, diarrhée, soins aux nouveau-nés et barrières politiques, capacités techniques et administratives, l'acceptation des professionnels de la santé et de la communauté, aspects techniques, etc.]
- D'après vous, les difficultés de mise en œuvre sont-elles liées à la manière dont la politique a été élaborée? Comment?

16. Quels sont les types de financement disponibles pour la politique de PCIME-C au Niger? Comment est-ce que la disponibilité des financements a-t-il évolué au fil des années ?

- Comment est-ce que la disponibilité des fonds a-t-elle influé sur l'élaboration de la politique ?
- Souvent les fonds pour ce type de projet viennent de divers bailleurs. Est-ce que c'est le cas pour la PCIME-C ? Si oui, comment est-ce que cela a-t-il affecté la mise en œuvre de chacune des composantes de la PCIME-C ?
- Quelles sont les perspectives à long terme pour pérenniser le financement de la PCIME-C ?

Enquêteur : Posez la question 9 seulement si le répondant n'a pas encore mentionné les soins des nouveau-nés dans le cadre de la PCIME-C.

17. Quelle est la situation actuelle de prise en charge des nouveau-nés dans le cadre de la politique de PCIME-C au Niger ?

- Quel est le niveau d'intérêt auprès des acteurs pour inclure les soins des nouveau-nés dans cette politique ?
- Quelles sont les parties prenantes qui ont manifesté le plus grand intérêt en faveur de la prise en charge des nouveau-nés dans le cadre de la PCIME-C ?
- Quelles sont les difficultés spécifiques liées à la prise en charge communautaire des nouveau-nés?

18. Y a-t-il d'autres aspects sur l'élaboration de la politique de PCIME-C que nous n'avons pas encore discutés ou que vous aimeriez partager avec moi ?

JE VOUS REMERCIE TRES SINCEREMENT D'AVOIR ACCEPTE DE PARTICIPE
A CETTE ETUDE.

VOS REPONSES NOUS SERONT TRES UTILES POUR MIEUX COMPRENDRE
COMMENT LA POLITIQUE DE PCIME-C A ÉTÉ ELABOREE AU NIGER.

8.2.2 Codebook for qualitative analysis

Policy Analysis of Integrated Community Case Management for Childhood Illnesses and Newborn Care

Codebook

Ref.	Codes	Definition	Example
CONTENT			
C1	Local definition	Definition of iCCM in the country, including various forms of terminology (e.g. What is iCCM called?).	
C2	Components included	Components included in current/planned iCCM policy, incl. treatment and other services for diarrhea, pneumonia, malaria in children and newborn. May also include other services such as malnutrition, red-eye, etc.	
C3	Integration	Discussions about integration or lack of integration between iCCM services, and between iCCM services and other packages of services, such as supplementation or health promotion.	
C4	Difference between iCCM and other policies	Difference between current/planned iCCM policy from other child health policies.	
C5	Other policy content	Other issues relating to iCCM policy content not covered by other codes, such as reasons for selecting piloting or implementation sites, financing and remuneration decisions, human resources issues, etc.	
C6	Policy gaps	Discussions about issues that should have been taken into account during the formulation of iCCM policy, including content missing from the policy, who is responsible for different aspects of iCCM, etc.	
EVOLUTION			
E1	Issue identification	Describes how iCCM is discussed as a policy option, such as historical origins of the policy, including what issues iCCM is meant to address, and how issue identification has evolved over time.	
E2	Timeline	Evolution of different iCCM policy components, including when iCCM started gaining traction at the policy level.	
E3	Next steps	How iCCM policy is expected to develop in the future.	

POLICY PROCESS			
P1	Formulation of iCCM	Description about how iCCM policy was/is formulated, including how typical the iCCM process is/was compared to other policy formulation, how fast or slowly it has been formulated. Does not include discussions specific to the participatory nature of the policy formulation.	
P2	National events	Landmark or critical events at the national level that influenced the formulation of iCCM policy, including meetings and discussions. Can be formal or informal events.	
P3	International events	Landmark or critical events at the international level that influenced the formulation of iCCM policy, including meetings and discussions. Can be formal or informal events.	
P4	Participation/Consultation	Description of the nature of the policy formulation process for iCCM and how the process hindered or enabled participation. Includes discussions about openness, transparency, consultation and stakeholder involvement. Does <u>not</u> include discussion about specific actors and their roles [see ACTORS].	
CONTEXT			
X1	Political factors	Political factors that have influenced the development of iCCM policy, and how they have influenced it (e.g. new government, decentralization, coup d'état). Includes the influence of political factors on the content, actors and process of iCCM policy.	
X2	Social/Historical factors	Social and historical factors that have influenced the development of iCCM policy, and how they have influenced it (e.g. community empowerment, legacy programs). Includes the influence of social/historical factors on the content, actors and process of iCCM policy, such as acceptability of iCCM at the community level.	
X3	Technological factors	Technological factors that have influenced the development of iCCM policy, and how they have influenced it (e.g. RDTs, blister packs of medicines). Includes the influence of technological factors on the content, actors and process of iCCM policy.	

X4	Laws / Policy instruments	Laws and policy instruments that currently exist that in some way relate to iCCM, including MoH plans, directives, safety guidelines, etc. Includes laws that could facilitate or hinder iCCM in the future. Can be conflicting policy instruments or lack of clarity in policy instruments.	
ACTORS			
A1	Government health sector	Offices, agencies and departments from the Ministry of Health that have played a role in formulating iCCM policy. Also, includes those who are responsible for iCCM, including the different components of iCCM (diarrhea, pneumonia, malaria, newborn, CHWs).	
A2	Other government sectors	Government offices, agencies and departments outside the Ministry of Health who have/had a role in developing iCCM policy, including the different components of iCCM (diarrhea, pneumonia, malaria, newborn, CHWs).	
A3	NGOs	NGO actors and organizations that have played a role in developing iCCM policy. <u>Only</u> refers to NGOs, such as local NGOs, PSI, CARE, MSF, etc.	
A4	Funders	Funding actors and organizations that have played a role in developing iCCM policy, such as bilaterals, multilaterals, foundations, and other donors, including the different components of iCCM.	
A5	Technical Assistance	Actors and organization that have provided technical assistance during the formulation of iCCM policy, including consultants, long-term expatriate advisors, etc.	
A6	Miscellaneous actors	Actors and organizations that are <u>not under other Actor categories (Gov't, NGO, funder, TA)</u> that have played a role in formulation iCCM policy. Includes researchers/research institutions, professional associations, media, broader civil society, etc.	
A7	Leadership	Actors and institutions that led the process of developing iCCM policy. Includes those that played key leadership roles in moving the policy forward.	
A8	Power	Relative power and influence of different actors, including reasons for why actors are/are not powerful, and different sources of power (e.g. funding, political power, administrative position), how power was used by actors in policy process.	
A9	Alliances	Description of alliances and non-alliances between	

		actors, including whether actors have a history of working together, and whether alliances have shifted over time.	
EVIDENCE & DATA			
D1	Data	Scientific data that have played a role in the development of iCCM policy, including research evidence, surveillance data, HMIS, administrative data, etc.	
D2	Tacit knowledge	The role of tacit knowledge, experience, personal beliefs, values and other, non-scientific sources of evidence in the development of iCCM policy. (E.g my work at the district level taught me...)	
D3	Learning from others	iCCM projects or programs, both within the country and internationally, that influenced the development of iCCM policy. Includes pilot projects.	
D4	Evidence use	Descriptions of how evidence is/was used and which actors have used evidence in the discussions about iCCM policy, including to promote positions for or against aspects of iCCM.	
D5	Framing	How actors have consciously framed the thinking around the problems that iCCM addresses and the potential solutions. Includes both internal framing (within a group of actors) and external framing (outward to other stakeholders).	
IMPLEMENTATION			
I1	Overall implementation	Overall impressions of the extent of implementation of iCCM and how implementation is proceeding in-country, including actors and institutions that are responsible for implementation. Also includes futures plans for implementation of iCCM.	
I2	iCCM implementation vs. iCCM policy	Issues with iCCM implementation that are related to how iCCM policy was formulated.	
FINANCING			
F1	Financing in policy formulation	How funding issues influenced iCCM policy formulation.	
F2	Overall financing issues	Current issues around financing iCCM, and types of funding and their sources currently available.	
F3	Future funding	Plans for future funding support of iCCM, including the predictability of external funding, and plans for integrating different funding streams to support	

		iCCM.	
COMMUNITY HEALTH WORKERS (CHWs)			
H1	CHW profile for iCCM	Characteristics of different community health workers delivering iCCM services, and their role in delivery.	
H2	Linkages to health system	Issues around relationships with other health workers, supportive supervision and training for iCCM services, distribution of medicines/supplies to CHWs.	
CODE QUALIFIERS (Codes applied to portions of text that have been coded with a distinct code (e.g. financing, actors, etc.) that need to be qualified further)			
Q1	Barrier Factors	Classification for any statements about barriers to iCCM, including content, formulation, actors, evidence, implementation, financing, CHWs, and others.	
Q2	Facilitator Factors	Classification for any statements about facilitators to iCCM, including about content, formulation, actors, evidence, implementation, financing, CHWs, and others.	
Q3	International	For any discussions that have an international aspect, including international actors or organizations, evidence from international sources, etc. Also known as: International Sauce (that is used in conjunction with other codes).	
Q4	Newborn	For any discussions about newborn-related issues, include issue identification, services offered at the community level, challenges specific to advancing the newborn agenda, actors, etc.	

Chapter 9. About the author

Sarah Dalglish examines structural and social determinants of health in low- and middle-income countries and the upstream factors that affect the health of poor populations. As a social scientist committed to the inter-disciplinary nature of public health, Sarah draws upon theoretical and methodological concepts and tools from political science, development economics, and social theory, with the goal of locating the sources of global health inequalities and defining potential solutions. Methodologically, she is committed to the use of qualitative research methods to provide thick, rich descriptions of complex issues in public health, as well as the more targeted use of quantitative methods to provide precise insights and work towards proving or disproving hypotheses in global health. Sarah has published articles in newspapers, magazines and [peer-reviewed journals](#).

Before beginning her PhD at JHSPH, Sarah worked at the Pasteur Institute in Paris, France, focusing on the global network of Pasteurian research institutes, as well as other French NGOs and institutions in public health. She has professional public health experience in Niger, Mali, Ghana, Egypt and a number of other Africa countries, and maintains extensive ties to the Francophone health world, including the Pasteur Institute, the Global Health chair at Sciences-Po (Paris), the National Research Agency on HIV and Hepatitis, and French NGOs working on HIV/AIDS, among other institutions. She also has professional experience with NIH Fogarty Training Center, the Clinton Health Access Initiative (CHAI), USAID and global consulting firms. She has in-depth knowledge of the Sahel region of Africa, including its political and social history, culture and mores, and languages (French and Hausa). Her PhD was funded in part by the Sommer Scholarship at JHSPH.

Sarah was born in Levallois-Perret, France on February 11, 1983. She lives in Paris.